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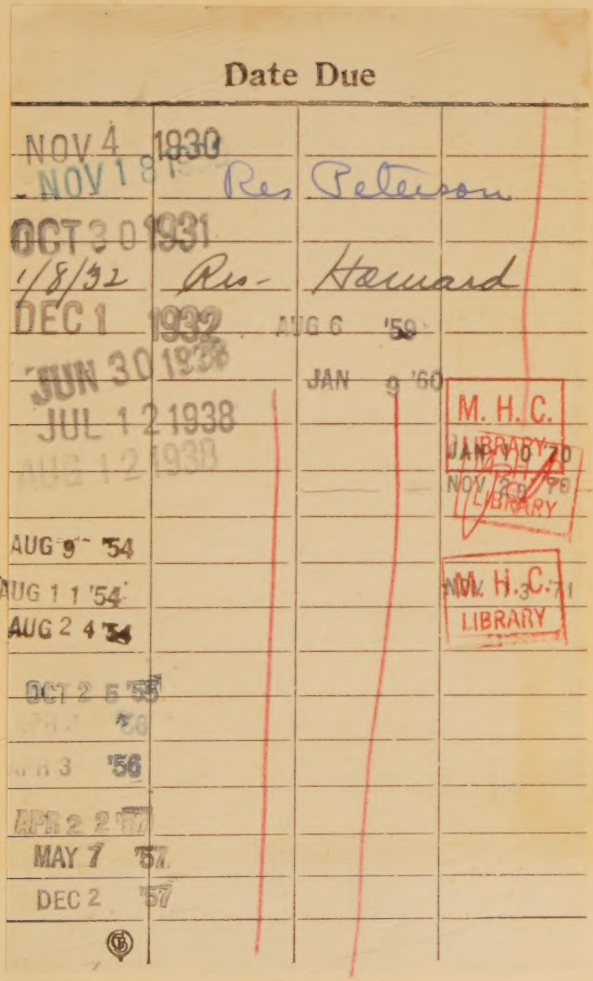
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PRINCIPLES OF ELEMENTARY EDUCATION AND THEIR APPLICATION

DISCARD

BY

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PREFACE

This book seeks, first, to set forth the principles of elementary education, and second, to apply these to the work of the elementary school.

To establish the principles of elementary education, and to bring to view what is implied in them, a study is made in Part I of the relation between the individual and society, also of the nature of the mental life of the child, of how the child develops, and of how he learns.

Part II seeks to determine, in the light of the principles developed, the aim of elementary education, the curriculum of the elementary school, the methods of elementary instruction, and the organization of the elementary school.

The effort made to establish the principles of elementary education, the conception held of the inter-relation between the individual and society, the theory of human nature and of human development set forth, the social or national aim of education advanced, the analysis of the learning processes, and the methods of instruction presented are among the distinctive features of this book.

The materials offered are sufficient for a three-hour course during two terms or a five-hour course for one term. The book may be used in two ways. First and preferably, it may be followed chapter by chapter. Second, where students purpose to give only a short period to preparation and desire to concentrate more particularly upon class teaching, a course in the Principles and Methods of Elementary Instruction may be given by taking Sec. 4 of Chapter IV, and Chapters V, VIII, and IX.

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PART I

PRINCIPLES OF ELEMENTARY EDUCATION

THE PRINCIPLES OF ELEMENTARY EDUCATION

CHAPTER I

THE RELATION OF THE INDIVIDUAL TO SOCIETY

§ 1. The Problem

The majority of books on education treat the subject as if the school had to do only with what is needed to secure the development and highest life of the individual. We have, however, come to see that the school has to do also with the interests and purposes of society. The recognition that the school has to do with society as well as the individual has introduced into the study of education two questions: (1) What is the relation of the individual to society, and (2) What is the relation of society to the individual?

To consider these relationships and to formulate the insights gained through these studies, becomes our first task. It is with the relation of the individual to society that we begin.

§ 2. Society and its Characteristics

A human society is a group of people dwelling together, who have a common country, common institutions, common ideals and purposes, such as the English, the French, the Germans, or the people of the United States.

It is not merely the fact of a people living together that makes a society. It is rather their dwelling together in psychical relations. By psychical relations is meant the appreciation, on the part of each member of the group, of emotional bonds binding him to the whole, the recognition by each individual that his conduct must conform to given standards of action, the recognition that each member of the group has duties with reference to him and that he is under corresponding obligations to them. It is the appreciation, on the part of its members, of such psychical relations that is distinctive of society. For this reason, a human society is regarded as a psychical organization. That is, it is an organization in which the bonds holding its members together are emotional and mental, and not chemical as with water, nor mechanical as in the case of a pile of bricks.

As a psychical organization, society is not static. The relations between men within it undergo change. Improvements occur in standards of conduct, in what is regarded as the citizen's duties to his fellows and to the social whole. Puritan ideas of conduct and duty, for example, are not the ideas of the present. The form of society may also change. In one age, a given society may be an oligarchy, in another it may be a monarchy, while in still another, it may be a democracy. France is illustrative. Society is thus a living thing, subject to change and development.

Again, an organization has an end or purpose. That of certain organizations, like charity associations, is found apart from any direct benefits the members may derive. As a rule, however, the purpose of an organization, for example a labor union, or trust, or fraternal order, is to

further the interests of its members. This is particularly true of society; it not only has an aim, but its aim is to be found in the life and welfare of its members.

§ 3. The Problem Restated

If it is accepted that the distinctive characteristics of a human society are that it is a psychical organization, that it is capable of growth and development, and that it finds its aim in the welfare of its members, it ought to be clear that genuine appreciation of the relation of the individual to society must rest upon insight into his relation to these characteristics. For this reason, we are able to limit our problem and to resolve it into a study of the relation of the individual to the existence of society as a psychical organization, into a study of his relation to its development and to its end or aim.

§ 4. The Individual and the Existence of Society

1. *The Distinguishing Mark of Man.* — Many efforts have been made to point out what quality distinguishes man from other creatures. Some hold this mark to be the upright position of his body; others, that it is his free hands; others, that it is language; and the list might be lengthened to include laughter, sympathy, choice, and volition. Whatever arguments there may be in favor of one or the other of these characteristics, there is a growing opinion that the quality which distinguishes man more than any other is the higher powers of his intellect.

2. *Higher Powers of the Human Intellect.* — Certain of the higher powers of the human intellect are of importance in this connection.

The first of these is self-consciousness. By self-consciousness is meant the consciousness of one's bodily states, feelings, thoughts, and actions as one's own, and the idea of one's self as a self that existed yesterday, exists today, and will exist tomorrow.

A second is the capacity to learn by ideas. Learning by ideas in the fullest sense implies sensation, perception, memory, imagination, and in particular the mental functions of comparison, abstraction, and generalization. Endowed with the capacity to learn by ideas, the individual is able to acquire knowledge of himself and of the external world, and able so to direct his actions in the light of the knowledge gained as to satisfy his needs. Through this capacity, he is also able to imagine possible experiences, to reflect upon them, and to pass judgment upon their desirability; in a word, he is able to conceive and project ends and to devise means of attaining them.

3. *Higher Powers of the Human Intellect and Society.* — It is the human intellect with its higher powers that makes more than the simplest forms of social life possible. It does this in that it supplies, first, the needed emotional bond. Man is endowed with sympathy, sociality, and an instinctive sense of justice. These instinctive tendencies are of themselves strong enough to supply the emotional bond required by a social order even higher than that of bees, beavers, and other animals. Though native sympathy leads the individual to give aid to his family and to the members of his group, it does not keep him from being uninterested in those not known to him. Likewise with the social instinct, it inclines the individual to live in peace with the members of his clan and even with the members of his tribe, but it does not deter him from in-

flicting outrages upon those not bound to him by ties of blood or fellowship. Similarly with the instinctive sense of justice, it leads the individual to a semblance of justice so long as he is dealing with his family, clan, or with his equals, but this native sense of obligation does not extend beyond his social group or to those different in race or station.

Something more than instinctive sympathy, sociality, and sense of justice is necessary to the existence of a society such as that of the American people. There is need of a sympathy extending to the farthermost member of the social whole, however unrelated he may be by family or racial ties. Witness the sympathy extended to the victims of the earthquake in Italy and to the sufferers in the European war. There is need of a sociality that inclines the individual to live at peace with his fellows and disposes him to coöperate with other members of the nation for the attainment of social ends. The presence of this feeling is evidenced in our social order by the peacefulness of private life and by the ready response to public call in times of social want. There is need also of a sense of justice so keen that the individual feels "a man's a man for a' that," and in duty bound to treat him justly notwithstanding race, color, or station.

It is only as native sympathy, sociality, and sense of justice are acted upon by the higher powers of the intellect that they are broadened and deepened. For example, sympathy, which extends naturally to those of one's immediate group only, may be broadened under the influence of intelligence to include the members of the community and of the nation, and it may even be so broadened as to extend to man wherever he may dwell. Similarly

with instinctive sociality and justice. It is in thus acting upon these social instincts and in giving them the needed breadth and depth that the intellect supplies the emotional bond necessary to the existence of other than the lower orders of social life.

Second, social life among men also implies an intellectual bond. Among primitive peoples, this is furnished by their idea of relationship. Only those persons are included within the tribe who are joined by ties of blood or adoption. Even when tribes were federated, as among the early Greeks or the American Indians, the bond of union was an imaginary relationship to a common ancestor. Among civilized people, however, ties of real or imaginary relationship are ignored as well as those of racial differences, and the bond of social union becomes one of principles and of ideals. The principles and ideals serving as the bond of union for the American Colonies in 1776 were set forth in the Declaration of Independence and embodied later in the Constitution, the preamble of which runs: "We, the People of the United States, in order to form a more perfect union, establish justice, insure domestic tranquillity, provide for the common defence, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this Constitution for the United States of America." Similar declarations are to be found in the constitutions of modern nations.

Not only does social life among men presuppose an intellectual bond, but also an intellectual basis. To be sure, no great amount of knowledge is needed if life is as simple as among the Eskimos, but an immense amount is needed in a social order like our own. That the Ameri-

can people may be supplied with food and shelter, a world of knowledge is put to use in carrying on farming, gardening, stock-raising, lumbering, mining, manufacturing, and in the transportation and distribution of the finished product. A further world of knowledge is implied in the existence and continuance of such institutions as the family, social intercourse, the school, the state, and the church. On the other hand, consider the knowledge one must possess to wind his way safely in and out of a crowded city, think of what one must have of customs and manners — to say nothing of ideals — to be able to live harmoniously with his fellows, of what one must know of the traditions and of the laws of the community, state, and nation to be a law-abiding and upright citizen. It is not necessary, of course, that any one individual possess all the learning implied in carrying on our social machinery and in pursuing all the lines of activity to be found in our social order, but it is necessary that each know some things and that this collective knowledge be had.

The principles and ideals supplying the bond of social life and the knowledge serving as its basis are not gifts of heredity to the members of society; these ideals and this knowledge are gained by them through the exercise of the higher powers of the intellect. It is in thus enabling individuals to acquire the needed insights and information that the human intellect makes possible the existence of society.

Third, the intellect supplies the motive for social life. The individual is able, as we have seen, to form ideals and to plan ways of reaching these. Were his intelligence limited so that he could only grasp ends which he himself might reach, there would then be no incentives for social life

other than those coming from instinct. But man is able to comprehend and appreciate ends which of himself he is unable to achieve, and to attain these he is compelled to seek the aid of others. It is ideas of this type that give rise to motives that move the individual to coöperate and to join in social undertakings. The average man, for example, is slow to take part in social enterprises until he can see that they will in some way be to his advantage. The motives leading the Colonists to revolt from England and to establish a new social order sprang from the conviction that they could thereby better their own condition and that of posterity. Thus the intellect, by enabling the individual to conceive of ends which he cannot by himself attain, becomes the primary source of motives leading men to forms of social life.

4. *The Individual and the Existence of Society.* — From this point of view the relation of the individual to the existence of society becomes clear. Society as a psychical organization implies the presence of certain emotional and intellectual conditions. These are furnished by the higher powers of the human intellect. The higher powers of the intellect are possessed only by human individuals. Consequently, apart from human individuals the breadth of sympathy, of sociality, and of the sense of justice, the insight into principles and ideals, the knowledge of means, and the motives for coöperation — all requisite to social life — are not present and society cannot exist.

To be sure, the existence of no society, say our own, is dependent upon the emotions and the intelligence of any one individual, but that a given society may be and continue, certain emotions and a certain degree of intelligence are necessary on the part of a majority, if not of all,

of its members. Let a majority of the members of a social order sink in their emotional life and in intelligence below what is necessary to appreciate and understand the underlying principles and ideals, the institutions, and the customs of that order, and the given society will sooner or later cease to be. Hence it is the individual, by reason of his emotions and intelligence, that conditions the existence and the continuation of society.

§ 5. The Individual and the Development of Society

1. *Meaning of Social Development.* — We mean by social development any addition to the materials or means of social life or any improvement in the machinery of the social order that gives man greater dominion over nature, greater dominion over himself, and secures to him a freer, fuller, and richer life.

2. *Factors in Social Development.* — Apart from the individual, there are involved in social development two kinds of factors, namely, natural elements — such as mineral resources, flora, fauna, etc. — and artificial factors. In our present study we shall pass over the natural factors and confine our attention to the artificial. This is not because the former are unimportant, but because the latter in connection with the individual are the determining element and the key to an appreciation of social progress.

The artificial factors of social development are natural science, social science, literature, art, and religion. That these are factors in social progress is evidenced by the fact that where they are found in their fullness and richness, there is civilization with its blessings, but where they

are found only in their beginnings, there stalks savagery. The reason is obvious; natural science lies at the basis of improvement in the production and transportation of material and mechanical things, as well as at the basis of sanitation and protection from disease. The social sciences are the foundation of changes for the better in the social order; literature is an element in communication, in preserving and imparting knowledge, and in the elevation of thought, while art and religion are factors in giving pleasure and in inspiring to nobler living.

The terms employed to designate these artificial factors are not used to characterize them as known by professors or experts, or as found in books. For there is also to be included under these terms those fragments of knowledge found crystallized in custom, embodied in tradition, and in the practice of the more common occupations, such as farming, stock-raising, housekeeping, dressmaking, etc. For example, to know how to make bread is natural science, but this knowledge, like a world of other information, comes to most housekeepers through tradition.

Furthermore, these factors are not to be viewed as things that are fixed, but as things that are ever changing and undergoing improvement. For a progressive society implies the presence of natural sciences that are ever widening their boundaries and deepening their insights, the presence of social sciences that are ever bringing forth conceptions and institutions permitting freer and better modes of social participation and activity, the presence of a literature which serves as the medium for expressing and recording the achievements of the mind, that is ever becoming richer in its content and more inspiring in its teachings, the presence of an art that grows more at-

tractive in its form and more human in its theme, and the presence of a religion that is ever growing truer in its conceptions, more refined in its motive, and more rational in its appeal. Let improvement in one or more of these factors stop, and the whole or a part of social development is arrested.

3. *Source of Artificial Factors.* — The mere enumeration of the artificial factors of social progress throws little light upon the relation of the individual to social development. Light will, however, be shed upon his relation to the development of society, if the source of these factors is considered.

An organism such as a butterfly or a house fly is moved to action by instincts. The human individual is likewise moved to action by inherited tendencies or impulses.

Though the individual is dynamic by virtue of possessing these impulses, their general effect, when taken alone, notwithstanding they impel to action, is to render the individual non-progressive. The non-progressive influence of inborn tendencies is to be seen in the animal world at large, in particular in the way bees make the cells of the honey-comb, birds build their nests, and ants form their hills. The influence of inborn tendencies is non-progressive because, though they give rise to needs, they do not supply the means of gratifying these needs, and though they constrain to action, they do not carry in themselves a knowledge of the ends to be reached through action.

The capacity to devise means, to conceive of ends as well as to choose between them, resides in the higher powers of the human intellect. It is this power of invention and choice in conjunction with inborn tendencies or impulses that renders the individual progressive and creative.

To illustrate, hunger impels the individual to seek food. By accident, berries, say, are found. The intellect seizes upon the fact, and on the return of hunger the memory of these comes to mind. If berries fail, other foods are sought, and nuts, roots, etc., are discovered and eaten. Under the impelling force of appetite and under the guidance of the higher powers of the intellect, the number of known edibles is gradually increased; by degrees, only the better ones are selected and eaten, methods of preserving and preparing these invented, means of artificially producing them devised, and ways of procuring additional and foreign ones established. Man has thus gradually advanced from the point where he was at the mercy of finding food wherever it had chanced to grow, to the stage where he consciously cultivates, preserves, prepares, and supplies himself with all that is essential to his nourishment.

The source of the artificial factors of social progress is to be found, therefore, in the progressive creativeness of the individual. Take, as an example, the rise and development of natural science. Life is preserved, and preserved well, only as advantage is taken of nature. The bringing of nature into the service of life presupposes knowledge of natural things. Such knowledge — though it be of the simplest and most empirical kind — is natural science, and, if arranged according to meaning, it is natural science in the accepted sense. Natural science may therefore be viewed as the product of impulse and of the higher powers of the human intellect. In like manner each of the artificial factors may be regarded as the product of one or more impulses and of human intelligence. As these factors exist in their present state, they are not, of course, the instantaneous outcome of the expression of impulse and the

creativeness of the intellect, but the resultant of ages of effort in the endeavor to satisfy human needs.

4. *The Agent of Social Development.* — If England of today is contrasted with England of the time of the Norman Conquest, great changes and improvements will be observed. Scarcely less striking is the contrast between life in the United States in 1789 and life in the United States today. In view of our purpose, the important question is, how were these improvements brought about?

It may be inferred, from the relation the individual bears to the artificial factors of social development, that every new increment added and every new application made of these factors is his work. Since the individual alone is able to add new increments to the artificial factors and to apply these to social development, he is the sole agent in the initiation of social progress.

The manner in which a given improvement is actually brought about, or the way social progress is consummated, is, however, not so simple. All the proposed contributions to natural science, social science, or religion are not accepted; all the reforms in family life, in social intercourse, and in the body politic that are agitated do not become crystallized in custom or embodied in law. Over and above the individual who creates or initiates, there stands a selective agent — a court that decides upon which offerings shall be accepted. This court is society — the many individuals who appreciate and the few who control. Approval may be a growth, as in the adoption of a custom, or it may be by an act of legislation, as in the abolition of slavery. Since only those results of individual productiveness and initiation which are socially approved cul-

minate in social advancement, society would seem to be the agent through which social progress is consummated.

A study of the nature of social approval leads, however, to another conclusion. Take as a type of reform consummated through conscious social action, the abolition of slavery. The idea of its abolition had its birth in the mind of an individual, but his advocacy of it alone could never have accomplished the desired end. Other individuals appreciated the idea, changed it according to their bias, and made it their own. Gradually, the necessity of abolishing slavery became the accepted conviction of the American people, and finally this was done through an act of their representatives. Though this reform was not made effective by the individual as such, yet he was the instrument of it from its inception to its completion, and what is true here is true of all movements for social betterment. Nevertheless, there is a difference between the individual as the agent who initiates and as the agent who consummates. For the initiation of social improvement rests with him as an individual, whereas its consummation is the work of individuals either in a personal or representative capacity.

5. *The Test of Social Development.* — The relation of the individual to the development of society is further revealed in the test of social progress. The only motive the individual has for bringing forth the artificial factors involved and in applying these to the improvement of the social order is that he may better his own condition or promote the welfare of others. Where the desired good can be attained without the intervention of social authority, the individual acts upon his own idea or upon the suggestion of another, because he thereby gains something which he

feels is of worth to himself or to others. Where the proposed innovation must be collectively or officially approved, the approval is, to a greater or less extent — at least in modern democracies — an expression of the will of the people, and is given because the reform is viewed as conducive directly or indirectly to the best interests of the members of the given social whole. To be sure, under every existing form of society there live multitudes whose condition is not ideal, and who would sanction but a portion of the social restraints imposed upon them; it is also to be conceded that social action is not always determined with reference to the welfare of all, but at times with respect to the interest of the few. Nevertheless, where society does advance, this progress is favorable to the higher and better life of its members. Indeed, in view of the source of its constituent factors, in view of the agent initiating it and bringing it about, social development can have no other test than human welfare — the higher life of the individual.

6. *The Individual and Social Progress.* — Being the source of the artificial factors involved therein, and being the agent who both initiates and consummates, the individual naturally conditions social development. The development of society is, of course, not conditioned by any single individual. It is, however, dependent upon the few who are able to add to the artificial factors and to initiate social improvement, and upon the many who are able to appreciate the value of proposed contributions and to assist in consummating social reforms. Deprive a social order of individuals able to prosecute investigations and to inaugurate social changes for the better, deprive it of individuals able to understand the value of these,

— as was practically the case in ancient Egypt and China, — and the given society ceases to develop and becomes static.

§ 6. The Individual and the Aim of Society

1. *The Aim of Society.* — In view of the test of social progress set forth above, it may be inferred that the aim of society is to minister to the needs of the individual. The individual is, as we have seen, dynamic, creative, and progressive. By virtue of these qualities, he not only seeks to satisfy his wants, but strives to gratify them progressively better. However, when left to himself, he will not always do this in ways conducive to the welfare of others. In consequence, society seeks, on the one hand, to aid in satisfying in the highest manner all human needs, and, on the other hand, to constrain the individual to gratify his wants in conformity with the interests of others. For this reason the aim of society may be said to be the realization of the highest life of its members.

Two illustrations will make this clear. When individuals come to appreciate higher forms of life than those they enjoy, they begin to strive for them. If these higher privileges cannot be secured by individual effort and under the given social limitations, they seek to mould public opinion so as to impel the recognition of the right to labor for them, and to bring about such social action as will aid in their acquisition. If the effort is successful, the object of both the law crystallizing the given phase of public opinion and of the given social action is to make possible to the individual a particular opportunity or line of development. Such are the social guarantees of

life, of liberty, of equality, the right to property, to education, to freedom of conscience, to freedom of speech, and to the pursuit of happiness, assured by modern societies to their citizens. On the other hand, when society comes to value certain qualities of character or a certain type of manhood, such social forms are instituted and such opportunities afforded as will call out or impel the desired development in its members. The particular quality of character may not be what the individual acting freely would seek to acquire, but as a rule it is one favorable to self-development under the given conditions of life. Present-day insistence upon intelligence, veracity, honesty, obedience, industry, temperance, chastity, etc., is typical of such social action. Society exists, therefore, — at least in ideal, — to meet the needs of its members and to foster individual development.

2. *The Aim of Society and Social Ideals.* — Whatever the aim of society may be in the abstract, in the concrete it is conditioned by social ideals, that is, by the ideals cherished by a people or nation as a whole. The social ideals of peoples not only differ, but those of the same nation vary from age to age. What a contrast between the standards of the Germans of the time of Tacitus and the standards of the Germans of today, between the standards of France of the Ancient Régime and those of the Third Republic, between the ideals of Puritan New England and those of our expanding democracy! It is, therefore, nearer the truth to say that the working aim of a given society is conditioned by the conception of life, of equality, of liberty, of property, of freedom of speech and of conscience, of education and intelligence, of veracity, honesty, obedience, industry, temperance, and chastity

prevailing at the given time, and that these prevailing conceptions condition the particular ends of attainment held before the members of the given society, the specific assistance and encouragement given, the particular limitations and restrictions imposed.

3. *The Source of Social Ideals.* — Society in every detail is created by its members, yet relatively few of these participate in its creation. The ability to make a contribution to the fund of social knowledge, of initiating a new custom or convention, of introducing a ferment in social life which will raise society to a higher level, — such ability is possessed only by individuals who have exceptional capacity for living near the life of the people, of absorbing their wisdom and spirit, of ministering to their needs, and of formulating their aspirations. Such individuals are the best endowed, the most gifted of the race. They are our Agassizes and Morses, our Whittiers and Emersons, our Barnards and Manns, our Edwardses and Beechers, our Washingtons and Lincolns. Any given society is, therefore, the product of the creative genius of the relatively few. These are, however, typical individuals, and for this reason society, though the work of the few, represents the thoughts, ideals, and aspirations of all.

Social ideals, like other parts of society, have their inception in the individual — not, of course, in the ordinary individual, but in the superior, the well-endowed. Every ideal in its original form is an individual's idea of how he or his fellows may best meet some need, or of how under the given social conditions he may promote his or their development. His idea may, to be sure, be modified by others as individuals, before it is received by them and

advocated as a principle of social action, and it may be still further modified by others in office, before it is accepted and imposed upon the members of the given society through legal enactment. However much or little may be taken from or added to the original conception, the foregoing is the history of every ideal cherished by modern democracies. Hence the individual is not only the source of social ideals, but of every change made in them from their inception to their acceptance, and even their acceptance is his work.

4. *Ideals of the Individual and the Aim of Society.* — Since the aim of society is embodied in social ideals, and these are but the highest conceptions of gifted individuals of how to order collective life so that it may be most conducive to the well-being of the individual, the aim of a given society is nothing more or less than the fused total of the highest ideals brought forth by its most eminent members both past and present. The aim of our own social order is, for example, but the fused total of the ideals brought forth and cherished by those sturdy men and women who have made our country's history in industry, in social institutions, in science and education, in literature, philosophy, art, and religion. Being the source of social ideals, it is therefore the individual — the relatively few well endowed — that determines the aim of society.

5. *The Individual and the Perfection of Society.* — Being thus conditioned, it is only the individual that is able so to modify the ends of society as to make possible higher and higher modes of personal living. A social order which affords increasingly better opportunities for personal living is being perfected, being brought nearer and nearer

the ideal society. The individual is, therefore, also the agent of social perfection.

§ 7. Conclusions

In view of the outcome of our discussion, the relation of the individual to society appears to be fundamental. First, it is his superior intelligence that supplies the emotional and intellectual basis and bond necessary to the existence and continuance of society. Second, he is the source of the artificial factors implied in social development, and not only initiates social progress but consummates it, and his freer, richer life is its test. Third, being the source of social ideals, he determines the aim of society and becomes the agent of its perfection. In short, society is dependent upon the individual for its existence and continuance, its development, and its perfection.

Readings

Ross, *Social Control*, pp. 1–48.
Fairbanks, *Introduction to Sociology*, pp. 87–115.
Blackmar, *Elements of Sociology*, pp. 252–259, 269–274, 317–325.
Betts, *Social Principles of Education*, pp. 22–31.
Baldwin, *The Individual and Society*, pp. 13–76.
Cooley, *Human Nature and the Social Order*, pp. 283–325.
Small and Vincent, *An Introduction to the Study of Society*, pp. 100–166.
Dealey and Ward, *Text-Book of Sociology*, pp. 169–175, 200–207, 267–287.
Ely, *Evolution of Industrial Society*, pp. 398–425.
Willoughby, *The Nature of the State*, pp. 309–350.

CHAPTER II

THE RELATION OF SOCIETY TO THE INDIVIDUAL

We now turn to the second question suggested above, that of the relation of society to the individual.

§ 1. The Individual and His Characteristics

The human individual is able to conceive of himself as a self. He thinks of himself as the subject of his feelings and the controller of his thoughts and actions. He thinks of himself as having a past, a present, and a future; as having certain worth and being of certain importance; as having certain rights and privileges; and as having certain duties to perform with reference to himself and to others. When thus regarded, there are three characteristics of the individual that claim attention.

First, according to the law of heredity, each organism, within limits, reproduces its kind, and man is no exception. Each human individual thus inherits the qualities of his kind, and his attributes are consequently not acquired, but inherited. Even more distinctive is the fact that the condition or the environment, making it possible for the individual to enjoy his inborn qualities, is not at least directly inherited. Nevertheless, the presence of such an environment is essential, if the human individual is to live the life made accessible to him by heredity. For just as the life of the frog presupposes the frog pond, so to be

a human individual in the fullest sense of the term implies surroundings which provide opportunity to live according to the requirements and possibilities of his inherited nature.

Second, the new-born child does not think; there is no recognition of an "I"; no distinguishing of self from other selves; no projection of ends and adjustment of means to their attainment. The child at birth possesses, to be sure, by virtue of heredity, capacities for gaining such insights, but in reality it is a reflex-instinctive machine set to the performance of certain preservative activities. Indeed, it is well along toward the fourteenth year before all the inborn tendencies of life make their appearance, before the child attains any considerable maturity of thought, and before it comes to think of itself to any considerable extent as a self. The infant is consequently not an individual in the full sense of the word, but merely one in embryo, and becomes such only through a process of development.

Third, the human individual is a creature of wants, and these are ever constraining him to action. Gifted with the higher forms of creative thought, he is not only able to conceive of ways of satisfying these, but also able to conceive of ways which to him are better than those he enjoys. However contrary to casual observation it may seem, he ever seeks to satisfy his wants in the manner which seems to him to be the best. In short, the individual seeks to live the fullest and richest life, to attain the highest self-realization possible to him under the given conditions.

§ 2. The Problem Restated

If it is accepted that the distinctive characteristics of the individual are, that his nature is conditioned by heredity and his life as an individual by an environment providing opportunity to live according to his inheritance, that he is subject to development, and that he seeks the highest self-realization attainable to him, then the relation of society to the individual may be resolved into three problems: (1) What is the relation of society to his existence, that is, to his life as an individual such as we know and feel that we are? (2) What is its relation to his development? (3) What is its relation to the aim of life held and attained by him? Each of these questions will be considered in turn.

§ 3. Society and the Existence of the Individual

1. *Society and the Inherited Attributes of the Individual.* — Though it is difficult to see in the modern citizen more than the dimmest vestige of his far distant ancestor, — contrast for example the present-day German with the German of the time of Tacitus, the modern Italian with the ancient Lombard, — nevertheless it was out of such material that man as now known was evolved. In his development from dependency upon nature to that of sustenance through organized industry, from the exercise of mere animal-like functions to participation in the manifold aspects of civilized life, advance has been from less to more complicated social relations. Qualities sufficiently important to enable those who possessed them to get along well under primitive conditions not only became

useless, but often proved a hindrance in higher forms of social life: for example, the instinct to fight. As a result, there has been and there is now a constant elimination of traits useful under primitive conditions and a selection of traits useful in complex social relations. Through this selective process, determined by the ever varying demands of social life, the inherited nature of man has been gradually transformed and given its present character.

As an illustration of the transformation of human nature under the action of social selection, take the acquired power of sustained attention. Striking, indeed, in this respect is the difference between the savage and the individual adapted to a high state of civilization. Under strong excitation, such as imminent danger, the attentive power of the two, to be sure, differs little; the difference becomes apparent only when external stimuli are withdrawn. Much of this difference is doubtless due to conscious purpose and to education, yet a considerable portion of it has its basis in inherited predisposition. For in the development of man, there was open to him but one alternative, that of perishing or of adjusting himself to more and more complex modes of social life. This increasing complexity of social life imposed greater and greater demands upon attention. Those who could not meet this demand perished; those who could meet it survived and transmitted their hereditary power. In this way not only was the mental capacity of the individual gradually increased, but it also became predisposed to express itself in the form of sustained attention. "Attention is therefore an instrument that has been perfected — a product of civilization."

The power of reasoning or of thought possessed by

civilized man is likewise illustrative. Travellers are struck with the lack of such capacity among primitive peoples. "The Damaras," writes Mr. Galton, "count with difficulty beyond five, and if two sticks of tobacco were the rate of exchange for one sheep, it would sorely puzzle a Damara to take two sheep and give him four sticks. To be intelligible, each sheep must be paid for separately." Here, again, much of this difference is doubtless due to difference in the direction of interest and to a difference in environment and materials of thought. Still some of it is, without question, due to a difference in capacity. For there is little in the life of primitive peoples to impel reasoning, while the transition from primitive conditions to modern civilized life has been accompanied by greater and greater demands upon capacity for abstract thought. Those not possessing the requisite capacity succumbed and perished, whereas those having such capacity survived and flourished. Thus, under the selective action of society, men were born with gradually increasing powers of thought and came to be endowed with such capacity for reasoning as is found among civilized peoples.

Although there are cases of primitive peoples who seem always to have lived at peace among themselves and their neighbors, like the Eskimos, it is generally recognized that most primitive folk are warlike, and that those races have survived which proved themselves the best fighters. For there was a time when the fighting instinct was of supreme importance. With the change of social life from a military to an intellectual and ethical basis, the fighting instinct did not retain its primary significance; sympathy, sociality, and intelligence became of greater worth. In this new order and under these changed conditions, the citizen

pugnacious by nature came to be at a disadvantage, and was gradually displaced by the more sympathetic, social, and intelligent. As a result, the more pugnacious were gradually eliminated and there was bred in man a deeper natural sympathy and a stronger natural tendency to coöperation, such as is found in the modern man.

As a final illustration, take a trait almost unknown to savages — the predisposition to work. It comes natural to the members of modern society to labor. This may be due somewhat to interest, to example, to education, and to the development of other qualities, still it depends in large measure upon inherited disposition, and the individual born under centuries of civilization works as naturally as the pointer points or the race-horse runs. Savages as a rule are lazy, and the dictum, "Indian, no work," applies to all barbaric peoples. Even half-civilized tribes find labor repugnant, and it is only among highly developed nations that there is found the hereditary tendency and power of continuous application. Even among the foremost of modern people, there is a class of individuals — vagabonds, thieves, etc. — who seem incapable of protracted effort; these are, however, viewed as abnormals and dealt with as such. Industry being a condition of higher life, in the transition from barbarism to civilization the lazy and good-for-nothing perished, and the industrious survived and transmitted their capacity and predisposition to labor. Thus the modern citizen, under the social determination of heredity, was bred to work and gradually acquired those characteristics described by Mr. Chadwick as, "Great bodily strength, applied under the command of a steady, persevering will, mental self-contentedness, impassibility to external irrelevant impressions, which

carries them through the continuous repetition of toilsome labor, 'steady as time.'" [1]

Illustrations of how the inherited attributes of the individual have been transformed through the action of society and made what they now are might be multiplied until the whole range of the child's inherited traits was covered. A sufficient number, however, have been given and the principle upon which the determination of the qualities transmitted discussed at such length as to warrant the inference that the individual owes his being as he now is to society, and that society through determining the character of the attributes inherited has within limits made the individual what he now is as an organism. Without society in the past, the individual endowed as he now is would therefore not exist. There would, of course, be individuals, even if there had never been forms of social life, but they would be radically different in inherited tendencies and capacities from the ones we know.

2. *Society and the Living of Human Life.* — In the second paragraph of the Declaration of Independence are found these words: "We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable rights, that among these are life, liberty, and the pursuit of happiness." If to the above we add the right to property, we have a relatively complete list of the so-called unalienable rights of man.

What is meant by an unalienable right? To be sure, it means a right which cannot, except for cause, be taken away or denied the individual. Its meaning, however, lies deeper. It means a privilege which an individual

[1] Quoted from Galton, *Hereditary Genius*, pp. 347–348.

must enjoy, if he is to live according to his inherited nature, if he is to live as a human being. In short, we mean by unalienable rights those privileges or the environment which must be enjoyed if human life as we know it is to be lived. For, deny the individual the right to the pursuit of happiness, to liberty, and to property and he is reduced to slavery; deny him the right to life and he is lowered to the level of the animal. There can be no question that it is the enjoyment of these privileges along with others that makes possible such human life and living as we know. Whence are these natural or unalienable rights?

The Declaration of Independence declares they are the gift to the individual from the Creator. That there are certain laws controlling the development and life of the individual writ large in his inherited nature is true; this is really the thought of our forefathers. That man, to live the fullest and richest life, must conform to these laws is also true, but that the Creator guarantees the individual in the rights implied in living in accord with his nature and supplies him with the conditions most favorable to this is not true; these privileges or this environment must be guaranteed and supplied by other agencies.

To think that the so-called unalienable rights of man are the gift of the Creator rests upon a misconception of what constitutes a right in any human sense. Professor Holland[1] defines a right as "one man's capacity of influencing the acts of another by means not of his own strength, but of the opinion or force of society." "There can be no rights," says Green,[2] "without a consciousness of common interests on the part of members of society.

[1] Quoted from Green, *Prolegomena to Ethics*.

[2] Green, *Prolegomena to Ethics*, pp. 191–202.

Without this, there might be certain powers on the part of the individuals, but no recognition of these powers by others as powers of which they should allow the exercise, nor any claim to such recognition, and without this recognition or claim to recognition there can be no right." A right, then, is nothing more or less than a privilege guaranteed or an opportunity supplied the individual by the social whole of which he is a part, and it is not something born with or inherent in him. The framers of the Declaration of Independence recognized this, for after enumerating the more important of the so-called unalienable rights the Declaration runs, "To secure these rights, governments are instituted among men."

There are, therefore, no rights belonging to the individual — in the sense that he is secure in them — other than those guaranteed by the society of which he is a member. That the American citizen enjoys the right to life, to property, to liberty, and to the pursuit of happiness is not because these are natural rights, but because they are secured him by our Constitution; the same individual as a member of a different government, as Russia, would have different privileges, while alone on an island inhabited by tigers only, he would enjoy none.

Apart from social relations, the individual possesses consequently only those privileges and opportunities and only that environment which he can of himself secure for himself. He who boasts that his life is sacred, that he possesses property, that he is free, that he can live according to the requirements of his nature states, therefore, but half a truth, and should complete his declaration by adding, "because these privileges are guaranteed by the society of which I am a member."

Since the individual must enjoy certain rights in order to live as a human being, and since it is the social order of which he is a part that secures to him whatever rights he possesses, it is therefore society that makes possible human life as we know it. For, take away these social guarantees, this environment, and the individual is reduced to the level of the savage, and human life as now lived ceases to be.

3. *Conclusion.* — That the individual inherits the impulsive tendencies and mental capacities he now does is due, as we have seen, to the selective action of society upon his ancestors, and that he is able to live the life he now lives is made possible by his political, industrial, educational, and religious privileges and opportunities — in a word, is made possible by the environment guaranteed by the social order of which he is a member. The existence of the individual as he now is in body, mind, and spirit is therefore conditioned by society of the past, while the existence of human life as now lived is conditioned by that of the present. In short, society — taking that of the past and present together — conditions the existence of such individuals as we are in psychical endowment and manner of living.

§ 4. Society and the Development of the Individual

1. *Capacities for Psychical Development.* — The child's capacities for development are the impulsive tendencies and mental traits inherited from his parents.

Much has been made of late of the uncoördinated character of the nervous system of the new-born, and of its plasticity during the period of infancy. It is the lack of nervous complexity and of plasticity among animals

that bars to them after birth all but the slightest development and training. Animals, as it were, are born educated. The child, in contrast, by virtue of an abundance of uncoördinated nerve cells and by virtue of the ease with which these may be moulded in desired ways, is susceptible after birth of large development and of a long period of education. The uncoördinated character of the nervous system of the child and its plasticity should, however, not be regarded as traits that develop, but as accompanying conditions of the child's several tendencies and capacities.

2. *Development of the Individual Dependent upon Materials of Culture.* — Whatever capacity for development the child may possess, the degree of attainment he achieves is not conditioned wholly by the impulsive and mental traits he inherits; this depends also upon the materials of culture or upon the psychical environment that he can appropriate and utilize in furthering his development. An illustration will make clear the correctness of this position.

It is generally recognized that primitive peoples, like the Indians and Eskimos, possess capacity for development which if actualized would raise them to a stage of civilization higher than the one they enjoy. Yet these primitive peoples with their native ability remain, when left to themselves, in a state of barbarism. What is true of a people is in this case true also of the individual. In the "Dark Continent," there are doubtless negroes with as much natural capacity as possessed by the twelve hundred and more negro graduates of American colleges, but perhaps nowhere among the millions of native Africans is there an individual whose attainments could compare with those of the weakest of these colored graduates. The Franks, Teutons, and Britons of the time of Cæsar possessed, as

is generally believed, only slightly less ability than their modern descendants, yet individual development among them was far below that of the present-day German, Frenchman, or Englishman. In a word mere capacity for development does not insure it; other factors are essential.

Again, the appearance of such individuals in Italy in the fourteenth, fifteenth, and sixteenth centuries, as Petrarch, Boccaccio, and others was not due to a sudden increase of capacity in the Italians, nor wholly to the exceptional abilities of these men, but rather to the new conception of life and the new materials, acquired during the Renaissance, upon which they could react. The difference between a Sandwich Islander or a New Zealander of today and of a hundred years ago is not due to difference in ability, but to a change in the conditions of psychical development brought about by the introduction into these lands of Western civilization. Likewise, the difference between the early Franks, Teutons, and Britons, and the French, Germans, and English of today is explainable only upon the ground of change in the materials of culture.

Though the development attained by the individual is conditioned by the materials of culture which he can make his own, yet neither capacity for development nor the materials thereof should be exalted one over the other, nor should they be thought of apart, for both are essential to a well-rounded life. It is, however, probably true that favorable materials of culture are a larger factor in the development of the individual than exceptional capacity.

3. *Materials of Culture.* — The materials of culture, upon which the development of the individual depends, comprise — at least in the case of highly civilized people

— natural science, social science, literature, art, religion, and general spirit.

Natural science, as an element, includes besides our systematized knowledge of mathematics, physics, chemistry, botany, zoölogy, etc., and our insight into the way in which these are applied to the practical affairs of life, that knowledge handed down by tradition from generation to generation and employed in industries like stock-raising, farming, housekeeping, and blacksmithing.

Under social science are to be brought occupations, the family, community, state, school, and church. Here, too, belong those customs and traditions which envelop every line of social intercourse, as well as all social ideals, theories, and knowledge of means which determine and influence the social order.

With literature are to be classed language and writing characterized by permanence of truth and beauty of style, such as poetry, fiction, history, and philosophy, also what may be designated unwritten literature, that is, those stories, fancies, and traditions which permeate and color the life of a people.

To the art element belong architecture, sculpture, music, and painting in their respective development, as well as the particular forms in which these manifest themselves in the taste of the people, for example, in amusement, in dress, in public parks and buildings, and in the home.

Under religion are to be brought sacred literature, creeds, ceremonies, modes of worship, ideals of life, and all pertaining to direct moral and religious teachings.

Though the element designated "general spirit" is invisible and intangible, a short absence from one's own folk brings it within the range of feeling. So powerful is

it that it gives color to all the other elements, and under its potency one finds himself falling into the ways of thought, feeling, and action of the people with whom he lives. "The spirit of a people," writes Falkenberg,[1] "is not a phrase, an empty name, but a real force, not a sum of the individuals belonging to a people, but an encompassing and controlling power which brings forth in the whole body, processes (e.g., language) which could not occur in individuals as such."

A comparison of the elements of the materials of culture with the artificial factors of social development reveals the fact that the two are the same. The inference to be drawn is that the artificial factors making social progress possible are at the same time those that condition the development of the individual.

4. *Materials of Culture as Materials of Development.* — The reason why these materials of culture are the materials of psychical development is not far to seek. Each increment of the materials of culture was brought forth by the individual, as we have seen, because it was the insight or knowledge of means needed to enable him to give such expression and direction to an impulse, or so to control his actions as to satisfy a practical need or to attain a development higher than that which he enjoyed, and it serves the same function in the life of whoever makes it his own and applies it. To illustrate, the individual is born into the world with capacity for science, and in the scientific element of the materials of culture he finds ready to hand materials upon which to exercise his ability and through the aid of which he may foster his development along scientific lines. He possesses social tendencies, and

[1] Falkenberg, *History of Modern Philosophy*, p. 623.

the element of the materials of culture having to do with institutions and social life supplies the medium of giving both expression and direction to these. The artistic element furnishes him with the means of artistic enjoyment and of cultivating his taste, while the religious element affords him materials adapted to foster his aptitude for morality and religion. The materials of culture are therefore the materials of development, because they supply the means necessary to the exercise and expression of psychical tendencies and capacities. It follows that the degree and type of attainment accessible to the individual are conditioned not only by the materials of culture, but by the character of those that he is able to appropriate.

5. *Society and the Materials of Culture.* — An individual alone upon an island and independent of others might gain a certain amount of knowledge which would be helpful in adjusting himself to his natural surroundings, and which would serve also as the medium of a certain amount of psychical development. Still, the amount of fruitful experience an isolated individual could acquire by himself within a lifetime would be small and would avail little as a means of livelihood and of culture. Furthermore, the experience of this supposed isolated individual would perish with him, and on-coming generations would not profit by his labors. If men lived in relative isolation, each new individual would consequently begin his independent existence at relatively the same point, each would discover practically the same facts, and these would in turn perish with him. That varied and rich materials of culture could not exist with men living in isolation is therefore obvious.

In our study of the relation of the individual to society,

we made him the ultimate creative agent. If what seemed to be the work of the individual is examined more carefully, it will prove to be the product of social rather than of individual endeavor. That is, it will be found that a given production is made possible to the individual through the aid of others. To illustrate, Marconi is said to have invented wireless telegraphy, but back of this invention lie centuries of history in which is recorded the labor of hundreds. Each of these workers contributed his part in enabling Marconi to make his invention. Doubtless the greatest single addition to science during the last century was the *Origin of Species* by Darwin; though this was the work of one master mind, many directly or indirectly had a share in it. Spencer's *Principles of Sociology* was by no means a small contribution, yet in the first volume he quotes three hundred and thirty-two different authors. The same is true of the creations of the hand. "All that man produces today more than his cave-dwelling ancestors, he produces by virtue of the accumulated achievements, inventions, and improvements of the intervening generations, together with the social and industrial machinery which is their legacy. . . . Nine hundred and ninety-nine parts out of the thousand of every man's produce are the results of his social inheritance and environment." Though the individual is the center and source of the creative energy of the human world, apart from his fellows he is shorn of his power. Only as he is aided by them is he able to bring forth those creations of mind, heart, and hand which contribute to the development of materials of culture. Collective aid of others is, however, dependent upon forms of social life. It is, therefore, society in the last analysis that makes the individual

productive and enables him to create those ideals of life and that knowledge of means implied in materials of culture other than of the lowest order.

The individual, through the aid of others, makes his contribution and ceases to be, whereas the social order of which he is a part may continue century after century. Because the social order does live on, it supplies the conditions for passing on the accumulations and creations of one generation to another. By reason of this transmission, each new generation, so far as the materials of development are concerned, begins practically where the preceding one left off, and is free to press on to new inventions and discoveries. Not only does social life thus place at the disposal of each new individual the fruitful experiences of the past, but, at least among the more highly civilized peoples of modern times, it renders available to him also the results of the work of his contemporaries. Through the medium of social life, the generations that have gone before labor for those that come after, and the materials that each new individual may make his own and use as a means of self-development are equal to the total that past generations as well as the present have acquired. Society, by thus rendering possible the transmission of the acquisition of one generation to another, becomes in consequence the condition of the development of varied materials of culture.

It should be remarked, however, that not all the acquisitions of the past are handed on to the rising generation. Each age passes judgment upon what is of worth, and tests its heritage by its own standards. Under this process of selection, only the best of the creations of past generations are preserved, while the dregs and dross are left behind. Such a selective process obviously presup-

poses social life. It is therefore society that conditions the rise of rich materials of culture.

6. *Relation of Society to Individual Development.* — The relation of society to the attainments of the individual is now readily understood. Since his development, other than the merest modicum, is dependent upon materials of culture, and since these in their variety and richness are made possible by social life, society conditions his development. Further, since the development of the individual is dependent upon the particular materials of culture he can appropriate and utilize, and the particular materials of culture he can enjoy are those made accessible by the social order of which he is a part, the society of which the individual is a member conditions also the character and degree of development attainable by him. The development of Englishmen is consequently conditioned by the materials of culture supplied and made available by England, of Americans by those furnished and rendered accessible by the United States, and so on to the lowest known social order, that of the Fuegians.

§ 5. Society and the Aim of the Individual

1. *Factors Determining Aim of Individual Life.* — Since the individual is what he is as an organism by virtue of inherited tendencies and capacities, and since the development of these is dependent upon materials of culture, the life chosen by the individual as his own is conditioned on the one hand by heredity and on the other by the materials of culture or the psychical environment influencing his development.

2. *The Individual as Predisposed by Heredity.* — The individual, as the resultant of heredity, summarizes in

his body and brain those characteristics of the race, of the particular branch of the race, and of the particular family to which he belongs that have proved their right to transmission. In consequence, heredity determines the type or character of human life. No individual, however much he may desire it, can live like a fish or like a bird, or exist without food, clothing, and shelter. His life is confined within the range of certain propensities, capacities, and needs, and he can only enjoy the kind or type of life to which he is disposed.

Heredity fixes also the limits of our development. However desirable it might be to have the strength of an Atlas or the wisdom of an Athena, there are limits to our development. The athlete, for example, may train with increasing strength for months, but ultimately he comes to a point beyond which he cannot go, though one better endowed excels with ease. Similarly with mental endeavor: the student learns that there are things beyond his power which he must leave to others with greater inherited ability. Even the gifted find that they have their limits.

Though human life is thus conditioned by heredity, heredity of itself merely registers or preserves. According to its law, each organism reproduces its kind, but of itself heredity does not determine what organisms shall reproduce and thereby condition what characteristics shall be transmitted. This rests with forces, apart from heredity, acting as a selective agent. The selective forces which act upon man and condition what individuals shall live and transmit their characteristics are, as we have seen, the needs of social life.

The survival of an organism depends in general upon its ability to adjust itself to the given selective environ-

ment, and since organisms reproduce their kind, each new generation inherits those characteristics which enabled the parents to live under the given conditions. The rising generation is consequently partially adjusted before birth, through heredity, to the given selective environment. If the selective conditions remain static, the adjustment becomes more or less complete, and the new-born is more or less perfectly adapted to its future abode, either through well-fixed reflexes and strong instincts, or through unorganized predisposed capacities which may be modified as the conditions of life demand. The tendency of heredity is, therefore, to equip the individual with those characteristics which enable him to survive. Hence the individual, through his hereditary equipment, is predisposed to the kind of life determined by the selective environment acting upon his ancestors. Fish are predisposed to live in water, birds to live in the air.

When heredity is socially determined, as in the case of man, the individual is thereby endowed with those impulsive tendencies and mental traits requisite to survival under social conditions, and predisposed through this hereditary equipment to the kind of life determined by society. Since one's ancestors may have been acted upon century after century by relatively the same selective conditions, the individual is equipped by heredity with the requisites of survival and is predisposed to life as determined by the society of his own people. The Chinaman is predisposed, for example, to modes of Chinese life, the Eskimo to modes of Eskimo life. It is in the light of this conclusion that the essentially social character of human nature is to be understood.

3. *The Individual as Disposed by Psychical Environment.* — Psychical environment, that is, the available materials of culture, becomes a factor in determining the life chosen by the individual, in that it supplies him with ideals and with knowledge of how to satisfy his needs.

The real needs of the individual may be classified as those arising from the impulse of self-preservation, for example, the need of food, clothing, and protection; as those springing from the impulse of race-preservation, like the longing for the satisfaction of the family and parental instinct; as those growing out of the intellectual impulse, such as the thirst for knowledge and for intellectual activity; as those having their source in the social impulse, among which is the desire for companionship and intercourse with others; as those having their basis in the artistic impulse, for example, the yearning for the beautiful; and, finally, as those springing from the moral-religious impulse, such as the craving for a deeper insight into the mysteries of self and of God, a hunger for greater self-control, better ideals, and purer motives. These are the needs common to men and felt by them to a greater or less extent.

A child deprived of opportunity to learn from others would gratify its wants much like an animal or like the most primitive savage. Such a child, though born of cultured American parents, would begin its independent struggle for existence and self-realization even below where the offspring of the most primitive people starts; it would have as its only resource certain impelling impulses, certain undeveloped mental traits, the consciousness of certain wants. In reality, however, the child born into a society such as our own finds, among our materials of culture, the

accumulated results of centuries of experience in endeavoring to satisfy the same human needs. To it is given in custom, in institution, and in law our conception of how to gratify, in the highest way, the wants arising from the impulse of self-preservation; as a means of gratifying his social needs there are presented to him our ideas of social intercourse, of social relations, and of civic life; and as an end toward which he may labor in giving expression and direction to his moral-religious tendencies, there is held before him the conception of human attainment and perfection cherished and safeguarded by the American people.

It is generally conceded that the ideals and the knowledge of means supplied the individual by psychical environment are a powerful factor in determining his life. Being schooled in the satisfaction of his wants according to these ideals, before he becomes self-conscious, and upon obtaining self-consciousness being unable to devise better ways, he is disposed to accept them as his own and to guide and direct his activities accordingly. Imitation and social sanction also work to this end; for few individuals have the originality to question the standards held before them and still fewer have the courage to persist in lines of action not socially approved.

In view of the influences exerted upon the individual by psychical environment, the mode of life to which he is disposed through it becomes evident, especially if that acting upon a particular individual is taken into account. The psychical environment acting upon a given individual is that of the society to which he belongs. The individual is therefore disposed to the type of life as revealed in the ideals and made possible through the means supplied by

the materials of culture of the society of which he is a member. The German is disposed thereby to life as found in Germany, the American to life as it exists in America.

4. *The Aim of the Individual.* — Being thus predisposed by heredity and thus disposed by psychical environment, what is the end or aim of life that the individual consciously chooses as his own and consciously endeavors to attain?

The aim of individual life, when defined abstractly, is self-realization. When expressed concretely, such an aim means the realization in one's life of the highest ideals of one's own people. But does life according to the highest standards of the society of which he is a member become likewise the individual's idea of self-realization, the accepted and conscious goal of his endeavor? There is no alternative. On the one hand, he is unable of himself to create a single ideal worthy the name, to say nothing of a system. All that the most gifted is able to do is to modify, add here and there some little increment to the scheme held before him. This of itself is a task taxing every resource of the mind, for the ideals cherished by society are the products of ages upon ages of social coöperation. Being powerless to evolve a conception of life worthy his nature, the individual can but accept and make his own the ideals supplied him by the social order of which he is a part.

On the other hand, because of the conditions of living as a human being, there is no opportunity for the individual to enjoy his own scheme of life, were he able to evolve such a scheme. There is left him, for example, in the matter of occupation no choice except within the limits sanctioned by society. If he transcends these, he is socially

ostracized or legally restrained. Likewise, there is no choice with reference to family life except within the confines of custom. Marriage in its legal aspects is clearly defined, and in its higher ethical and spiritual phases crystallized in tradition. Custom likewise circumscribes forms of social intercourse, and tradition and law determine specific modes of civic life. Infringement upon the one calls forth the force of public opinion; infraction of the other, the condemnation of the court. Freedom of thought, freedom of speech, freedom of conscience are taken for granted among highly civilized peoples, but the individual learns that even here he is bound, and that he is free only within the limits of social sanction. The individual is thus circumscribed in his activities in every direction; the range of his choice is fixed; the ends he can make his own are determined for him and not by him.

Few normal individuals feel the restraint of either of these limitations. This is not strange, since the ultimate end of society is to promote the highest life of its members, and since through heredity there is bred into the individual the propensities and capacities requisite to social life, and these are formed after birth, through years of training, in directions socially acceptable. Being thus socially bred and trained, the nature of the normal individual expresses itself within the limits prescribed by the social order of his people as naturally as the duck takes to water, the swallow to the air, or the Norman horse to work, and he finds his aim of life instinctively, as it were, in the ideals cherished by the society of which he is a member.

There are two classes, however, who do not do this: the one is the criminal, the other the genius; the one is the menace, the other the hope of society. The criminal,

either because of inherited anti-social tendencies or perverted education, falls below the standard of the social group, and he is either exterminated or his influence reduced to a minimum. Even in the criminal class, the given individual accepts in the main the scheme of life imposed. For it is only in one or in a few particulars that he is in opposition and comes into conflict with social demands.

Just as the criminal falls below the requirements of society, the genius rises above and creates new conceptions socially acceptable. But even the genius finds in the main his aim of life in the ideals of his people, for at most he is able to initiate reforms in only one or two directions.

If, then, the criminal and the genius are excepted, — and this cannot be wholly done, — it may be said that the normal individual, bred and determined as he is, finds his conception of self-realization expressed in the highest ideals of life held by the social order of which he is a part, and that life according to these ideals becomes the accepted and conscious goal of his endeavor.

5. *The Self-Realization Attainable to the Individual.* — Since the individual has no other choice than to accept the scheme held before him by the social whole of which he is a part, it follows that the ideals or ends of life which the individual may choose as his own, and consequently the self-realization attainable by him, is conditioned by society. Since the individual cannot live as a human being apart from society, he attains his highest self-realization, therefore, when he lives the fullest and richest life made possible by the social order of which he is a member. The German thus attains his highest self-realization when he accepts and makes his own the highest ideals sanctioned

by Germany, the American when he embodies in his life the best cherished by the American people.

6. *The Relation of Society to the Aim of the Individual.* — The relation of society to the aim of life held by the individual is therefore to be found in the fact that society, by acting upon him indirectly through the medium of his ancestors, predisposes him to social life in general and, by acting upon him directly through materials of culture or psychical environment, disposes him to the type of life approved by the social order of which the given materials of culture or psychical environment is an expression; it is also to be found in the fact that, through supplying him with the only worthy conception of life and through constraining him to accept this conception as his own, it conditions the goal of his endeavor and the life attainable to him.

§ 6. The Reciprocal Relation Between Society and the Individual

From our present vantage ground it becomes evident that the individual and society are not distinct phenomena, but that each implies the other. The individual conditions, as we have seen, the existence of society, while society conditions the existence of the individual. Social development is dependent upon the individual, but with equal truth his development is dependent upon society. The individual determines on the one hand the end of society, but on the other society determines the aim of individual life. Each thus conditions and determines the existence, development, and aim of the other. It is this reciprocal relationship that is implied in the expression, "No individual without society, no society without the individual."

§ 7. Educational Inferences

The foregoing studies of the reciprocal relation between the individual and society were undertaken that insight might be gained for the practical work of the school. The educational implications of the knowledge gained can be best understood if first put in the form of inferences.

1. *Welfare of Society the Interest of the Individual.* — Since the existence or mode of life, the development, and ends attainable to the individual are conditioned by society, the individual is interested in the continuation, development, and perfection of the social order of which he is a part.

2. *Welfare of the Individual the Interest of Society.* - Since the existence, development, and perfection of society is conditioned by the individual, society is interested in the highest mode of life, the highest development and self-realization of its members.

3. *Education an Interest of both the Individual and Society.* — It is generally conceded that the life and development of both the individual and society are conditioned by education. The individual on the one hand is therefore not only interested in a system of education which will foster his own highest development and self-realization, but also in a system which will further the existence, development, and perfection of the society of which he is a part. Society on the other hand is not only interested in a system of education which will foster its own existence, development, and perfection, but also in a system which will provide for the highest mode of life, the highest development and self-realization of its members.

4. *Education Conditioned by Social Needs.* — Since the mode of life, development, and self-realization of the

individual is determined by society, and the continuance and improvement of the social order is conditioned by the individual, a given society can provide for its existence, development, and perfection, and thereby provide for fulfilling its function with reference to the individual only, through so educating him that he is able to enter into the given social life and become a factor in its continuation and improvement. Hence education is a function of society, and a system of education which seeks to provide for the existence, development, and perfection of a given social whole, must promote the development and self-realization of the individual, but this development and self-realization, this education, must be conditioned by the needs of the given society as these are in turn conditioned by its function.

5. *Highest Interests of the Individual Conserved by Education Socially Determined.* — Since the mode of life, the development, and self-realization attainable to the individual are conditioned by society, that education which prepares the individual to enter into a given social order and to become a factor in its preservation and perfection is at the same time the education which prepares him for the highest mode of life, the highest development and self-realization attainable to him.

§ 8. Educational Principles

If the import of these inferences is now generalized, we have the following universally applicable principles of education:

1. Education is a function of society, and the educational system of a given society must be such as will provide for its existence, development, and perfection.

2. That system of education which provides for the existence, development, and perfection of a given society is at the same time the system which provides for the highest mode of life, the highest development and self-realization of its members.

Readings

Fiske, *Destiny of Man*, pp. 42–103.
Ross, *Social Control*, pp. 1–40.
Foundations of Sociology, pp. 327–348.
Fairbanks, *Introduction to Sociology*, pp. 260–268.
Betts, *Social Principles of Education*, pp. 5–22.
Baldwin, *The Individual and Society*, pp. 77–117.
Abbot, *The Rights of Man*, pp. 62–193.
Butler, *The Meaning of Education*, pp. 1–17.
Kidd, *Social Evolution*, pp. 264–275.
MacCunn, *The Making of Character*, pp. 1–7.
Thorndike, *Educational Psychology*, pp. 47–65, 77–79.
Muirhead, *The Elements of Ethics*, pp. 155–162.

CHAPTER III

THE NATURE OF THE PSYCHICAL LIFE OF THE CHILD

§ 1. The Problem

The individual who lives up to the highest and best in the life of his people is for all human purposes the perfected individual, the educated in the broadest sense of the term. The educated person as thus characterized is obviously a very different being from the new-born babe. The former has attained the degree of development and self-realization possible to him under the given social conditions, the latter merely has tendencies and capacities to be developed in ways that are socially approved.

The question arises: How is the child educated? Whatever answer is given, it will be granted that education is conditioned, at least in part, by the nature of the psychical life of the individual. There is involved, therefore, in the work of education a study of the psychical life of the child, if we are to know how to foster and control his development.

§ 2. The Aspects of Psychical Life

1. *The Two Divisions.* — The psychical life of the child is generally viewed as manifesting itself under three aspects: the intellect, feeling, and will. Though this is the division accepted in the main and found in our present-day textbooks upon psychology, it is a comparatively modern view.

The earlier division was a dual one, that is, all psychical phenomena were grouped as expressions of the intellect and of the will.

Feeling is not, however, ignored by those psychologists who hold to the dual division. They maintain that feeling, except upon the very highest level of psychical development, cannot be separated from the will, and that all feeling — other than of pleasure and pain — has its seat in the will and is to be regarded as an expression and part of it.

2. *The Position of the Teacher.* — Though a triple classification of psychical phenomena may be favorable to descriptive psychology, it is not so for the work of the teacher. Even were the weight of evidence not on the side of a dual grouping, the position of psychologists upon the culture of the emotions makes possible its acceptance in education, as it is generally agreed that the culture of the emotions depends on the one hand upon intellectual and on the other upon will development. Consequently, in the work of the school the culture of the emotions, apart from that of the intellect and will, may be ignored. This is, however, not to be taken to imply that the development of the emotions is not of importance; it merely means that their normal culture is a necessary result and part of normal intellectual and will development.

The teacher may, therefore, without doing violence to any psychological theory, regard the psychical life of the child as having but two aspects, that of the intellect and that of the will. The grounds for accepting this division and its advantages for education will become manifest as we proceed.

§ 3. The Will

1. *Meaning of Will.* — The conception of the will which students of education find most helpful is gained from considering it in relation to life. When thus regarded the will is that aspect of life which prompts to action. In the lower animals, the will excites to activities related to the existence and preservation of the organism and to reproduction. In the higher orders, and especially in man, it impels not only to activities related to the fulfillment of these functions but also to activities conducive to the enjoyment of other phases of human life. Every organism thus strives to live the life to which it is predestined by its nature. The will is consequently to be identified with our inherited tendencies, and may be defined as life in its dynamic aspect, or as a system of impulses arising from inherited propensities.

To vary life in its essential characteristics is to vary the will. Because of this relation between the will and life, the will of the amœba is one thing, that of the butterfly another, and that of man still another. The will is consequently not something apart from life; it is life in so far as this manifests itself in impulse.

2. *The Elements of the Will.* — Impulse, as regarded by psychologists, is so closely connected, on the one hand, with instinct that instincts are often called impulses, and on the other, it is so closely identified with desire that desire is defined as impulse associated with a conscious end. We have, then, in impulse a term employed not only to include those tendencies known as instincts, but employed also to designate the basis of desire.

We would not only characterize the elements of the

will as impulses, but as primal impulses. By thus designating its elements, we not only associate them with those inherited characteristics which constitute the foundations of human nature, but identify the will with those permanent tendencies which arise from these characteristics and which, when once they have made their appearance, exert their influence upon life at every later period.

Although often regarded as being the same, a primal impulse is to be distinguished from an instinct. An instinct arises, to be sure, out of an inherited characteristic, and in this sense it is an impulse. An instinct, however, may be transitory, it may be inhibited, or it may be buried in a consciously formed habit and lose its impelling force. Not so with a primal impulse: it arises out of a basic predisposition and is consequently permanent; it does not vanish nor can it be wholly inhibited. A primal impulse may, of course, be subordinated and transformed, be crystallized in habit, but it never entirely loses its force of propulsion. It is preferable, therefore, to view instincts as specialized expressions of primal impulses, as the special forms in which impulses manifest themselves. Fear, for example, is an instinct, and this mode of emotional reaction serves as a protective agency. But the congenital tendency of creatures to conserve their existence is a primal impulse, and fear is only one of the manifestations of this tendency. Anger and the fighting instinct may be similarly resolved. Any one or all of these instincts may disappear, but the primary tendency of the organism to act with reference to its preservation remains. In like manner are all instincts to be regarded and interpreted.

The primal impulses, constituting the elements of the will, are the impulse of self-preservation, the impulse of

race-preservation, the impulse of sociality, the intellectual impulse, the artistic impulse, and the moral-religious impulse.

3. *Characterization of the Elements of the Will.* — To make clear the nature and character of the human will, there is need to characterize each of its elements.

(*a*) The impulse of self-preservation. — The existence of the impulse of self-preservation cannot be questioned, and that it is the basic one of sentient creatures is little doubted. For, of what value would it be to an organism to be endowed with all that is implied, especially in self-conscious life, were it not moved by a deep-rooted tendency to sustain and protect itself?

Because of its importance, the impulse of self-preservation is the oldest propensity of human nature, and the first to make its appearance in the life of the child. During a considerable period it is the dominating impulse, and it is questionable whether its potency decreases much as the child advances in years. Other tendencies may exert their influence for a time, then be deadened, overridden, and almost trodden out, but it is impossible to do this with the impulse of self-preservation, at least in the case of the majority of individuals. For, even when through long periods of suffering and misfortune life seems no longer worth living, the slightest change in circumstances will restore this impulse with its persistent power, and life again becomes dear and worthy of every struggle. Likewise, when through education and discipline the impulse of self-preservation seems to have been brought into subjection, in an instant it will break all bonds and transform a cultured audience imperiled by fire into a horde of frantic beasts. Though in deliberative action other im-

pulses may control, in all sudden emergencies of life where danger is involved and impulse rather than reason rules, it is nearly always the impulse of self-preservation that determines action.

The function of this impulse is to guarantee the existence of life. Impelled by it, every creature instinctively seeks to sustain and protect itself, and its own preservation becomes as a rule the first interest of every organism. Its function is fulfilled through exciting two distinct lines of activity: the one has to do with nutrition, the other with protection. The one line of activity supplies the materials for the sustenance of life, the other shields the organism from influences that might prove destructive. Each of these lines of activity is excited by special manifestations of the impulse in the form of particular instincts. Those activities serving as protective are excited by self-love, fear, anger, and pugnacity, whereas activities that have to do with sustenance are stimulated by hunger and cold.

In connection with this impulse, there are certain related instincts which also impel to acts of self-preservation. Though other impulses have had a part in their rise, that of self-preservation has been the most influential. Among the most important of these related instincts are selfishness, emulation, ambition, rivalry, constructiveness, and acquisitiveness, or the collecting instinct.

The significance, for the life of the individual and for that of society, of the impulse of self-preservation with its varied forms of expression and related instincts can scarcely be over-estimated. On the part of the individual, it gives color and bias to his whole life. It lies at the basis of his combativeness, selfishness, and so-called egotism.

Still more important is the fact that, in the form of hunger and cold, it dooms the individual to a perpetual struggle for subsistence and to a life of labor and of practical activity, while the satisfaction of the needs arising from hunger and cold becomes one of the strongest motives dominating human action.

On the other hand, the impulse of self-preservation has deep sociological import. Through conditioning in large measure the life activities of the individual, it determines to a considerable degree both the form and structure of society. It has given rise to the larger part of industry, also to modes of protection to life and to property. Indeed, only as certain of the phases of society are viewed with reference to protection and nutrition is the reason for their existence and their function to be understood, and only as the relation between these and the human needs arising from this impulse is grasped is it possible to appreciate the direction that this element of the will must be given in the education of the young, and to appreciate the source and character of certain materials that must be used in giving it appropriate expression and determination.

(*b*) The impulse of race-preservation. — By the impulse of race-preservation is meant the sex-instinct and those instincts directly related to it, such as love in its different forms. This impulse is found in all but the lowest orders of sentient life, and it is a question whether it does not manifest itself even there.

The function of the impulse of race-preservation is to stimulate the organism to the reproduction and preservation of its kind. In its simplest expression, for example, among insects, frogs, and fish it excites merely to repro-

duction, but in the higher orders, such as birds, monkeys, and men it impels also to the nourishment, protection, and education of offspring.

This impulse does not appear in human beings until about the twelfth year. Of its manifestations, the first to arise is the sex-instinct, which reveals itself in a growing fondness for association with the opposite sex. Upon the heels of this stalks romantic love, and the impulse to establish a home. Closely related to these is the parental instinct which fills the heart with a longing for children. With the advent of children, there comes parental love and love of kindred. These give rise on the part of the mother to patience, carefulness, tenderness, sympathy, and self-sacrifice, and on the part of the father to courage, strength, industry, manliness, and self-reliance. When the impulse of race-preservation thus once appears, it never disappears, for in some form or other it continues to sweep the individual into relations from which he cannot escape, but which bring to the human heart the most precious experiences of life.

Although each primal impulse has its distinctive characteristics, they are not isolated psychic forces, but are reciprocally related and conditioned both in their evolution and in the exercise of their compulsion. The impulse of race-preservation illustrates this. On the one hand, this impulse is closely related to that of self-preservation and exerts thereupon a restraining and refining influence. On the other hand, it is not difficult to understand how its higher expressions add strength both to the impulse of sociality and to the artistic impulse. As an evidence of the latter, love in some one of its forms constitutes the chief and never-dying theme of music, poetry,

and other fine arts. The connection between religion and the sex-instinct is also close and has been of late a favorite topic with writers upon adolescence. In a similar way, the relation of each of the primal impulses to the others might be traced.

Returning to the impulse of race-preservation, its individual and social implications tax the resources of the imagination. On the side of the former, as an expression of one of the vital functions of life, it lies at the basis of certain of the physical and psychical differences between the sexes. It is also the source of one of the strongest and most revolutionary forces playing upon the individual, a force sufficiently strong to redeem him from himself and to turn him in the direction of coöperation and altruism. On the other hand, it is the foundation of the family, an important factor in the social order as seen in the clan, tribe, or in democratic society, and it contributes no small part to the instrumentalities of culture. Both its individual and social implications are thus summarized by Haeckel,[1] "We glorify love as the source of the most splendid creations of art; of the noblest productions of poetry, of plastic art, and of music; we reverence in it the most powerful factor in human civilization, the basis of family life, and, consequently, of the development of the state."

(*c*) The impulse of sociality. — Man as now known is a social animal. Wherever found he lives in small groups of two or more families, and wherever two or more families roam over the same land, they have more or less friendly relations with other similar groups of the same region, meeting with them for council, defense, religious

[1] Haeckel, *The Evolution of Man*, Vol. ii, p. 394.

ceremonies, or amusement. That savage man is almost always at war with adjacent tribes is no argument against his instinctive social nature, as the social impulse never extends to all individuals of the same species. Witness present-day antipathy between the white and the black. Whether man was originally a social creature and whether his social disposition is acquired is not the important point; the fact remains that as known to anthropology, psychology, and sociology he is social. So general is the presence of the impulse of sociality that the recluse or hermit is regarded as abnormal.

This impulse is deep-rooted and, after those of self- and race-preservation, is the strongest propensity of human nature. It is felt in the dislike for solitude and in the longing for companionship beyond that of the family circle. When isolation is temporarily enforced, the desire for human association becomes a passion, and the slightest sign of human presence is heralded with delight. Its strength is revealed in Darwin's story of three Patagonians who preferred being shot rather than to betray the plans of their companions in war; so strong is this fellow-feeling in civilized man, that he instinctively risks his own to save the life of a fellow creature, though he be a total stranger, and to its titanic strength is due in large measure the fascination of the crowd, the charm of the city, and the solidarity of society.

Though the social impulse prompts to activities favorable to procuring food, to providing defense, and to securing care for the young, it does not fulfill its function in thus contributing directly to the maintenance of the physical life of the individual and of the race. It fulfills its function more particularly through making possible a higher spirit-

ual existence. In isolation, the individual is weak and unable by his own efforts to attain the development of which he is susceptible; impelled by the impulse of sociality, he associates with his fellowmen and coöperates with them. Life is thereby brought into touch with life, the strength, experience, and insight of all are placed at the service of each, and not only is the way to higher life opened, but also the way to positive achievement in economic and artistic production, in the increase of knowledge and of culture.

The impulse of sociality first manifests itself in the life of the child in the form of gregariousness, which may be observed as early as the seventh week, when the babe shows pleasure in the presence of others. A somewhat later expression is sympathy, which appears at about the middle of the second year and which is extended in the beginning more particularly to those of the same age. At about ten or twelve, there appears the "group instinct," accompanied by the formation of cliques and clubs like the "North Siders," "South Siders," "East Enders," "West Enders." This is closely followed by what Mr. Pearson calls the "socialistic instinct," when the welfare of the society of which the growing youth is a member becomes of interest to him. Finally, with the approach of middle adolescence, there appears the "humanistic instinct," which binds the youth to all humanity and causes him to feel that the nations of the world ought to be one federation working in harmony for the elevation of the race.

On the side of the individual, this impulse is the source of those tendencies inclining him to coöperative life and of those emotions which exert a restraining influence upon both the impulse of self- and of race-preservation and refine human relations outside the family, and from it spring

those acts that the world calls morally beautiful. Without the impulse of sociality, the individual would be disposed to be indifferent to all save himself and to what he might call his family, and there would be lost to him those motives for action arising from sympathy, social interest, and humanitarianism, also the products of coöperative life so essential to his development. On the part of society, this impulse lies at its foundation, and although it is not the only impulse contributing to social life, it is the chief one. It has strengthened coöperative endeavor, facilitated the rise of industry and the division of labor, fostered forms of human intercourse, and rendered possible the development of mighty peoples homogeneous in thought, feeling, and ideals.

(*d*) The intellectual impulse. — The intellectual impulse is not so strong as the impulses considered above. Its force is felt, however, by all, and in its highest form — the love of truth — it becomes the dominant passion of some.

The intellect as such does not imply the existence of an impelling force prompting to its use; the incentive for this arises, at least in part, from other impulses as they manifest themselves in wants. These, however, supply no motive for mental labor when there is no practical necessity. It is at this point that the function of the intellectual impulse becomes apparent, as it supplies the force that impels to mental effort even when there is no practical need to satisfy, and even when the utility of the endeavor is not evident. The individual is thereby led to make discoveries which unexpectedly prove valuable, and he is thus fitted in advance for the satisfaction of his wants and fore-prepared to meet the difficulties of life. The intellectual impulse fulfills its function, therefore,

when it prompts to intellectual endeavor which may ultimately minister to human need.

The first manifestation of the intellectual impulse is the "appetite of the senses" — the mere delight in sensation. The force is independent of whatever influence the simple present needs of the infant may exert, and through it the child is constrained almost from birth to handle, taste, smell, and explore every object coming within his grasp or within the range of his vision. In this way he gains control of his senses and comes to coördinate them, and at the same time lays the basis of his future knowledge of the qualities and characteristics of common objects.

Closely related to the "appetite of the senses" is curiosity. Curiosity impels toward the new, and leads the child into regions beyond the circle of his immediate needs. He is thereby equipped against the future; for knowledge gained in an idle moment may forearm him to meet some emergency which otherwise might inflict pain or prove his destruction, or a series of pleasant experiences or accidental discoveries may open to him a new world of pleasure and a future field of labor.

Akin to curiosity is the love of truth. It is this form of the impulse that dominates the scientist, the poet, and the philosopher, and leads to scientific discoveries, poetic and philosophic creations. Yet, in the economy of the world, most of these creations prove to have as far-reaching practical value as if they were pursued alone in the view of utilitarian ends.

Perhaps no other manifestation of the intellectual impulse has been so much discussed and so extolled as imitation. So fundamental to the mental life of the child

is it, that James[1] holds, "His whole educability and in fact the whole history of civilization depends upon this trait." Exaggerated as this estimate of the importance of imitation may be, as an instinctive tendency to act in a manner similar to others it is undoubtedly a perpetual spur to mental effort. To be associated with imitation is play.

The intellectual impulse, by reason of its characteristics, supplies, on the one hand, the primary conditions for the formal education of the child. It tends also to transform the physical world, to a greater extent than would otherwise be the case under the sole stimulus of practical need, into an object of interest and thereby furnishes additional motive for scientific investigation; it likewise tends to make man himself, his possibilities, and his destiny, more an object of study, and thus adds increased incentive to poetic production and philosophic speculation; it also opens to him one of the greatest fields of human labor — the discovery and dissemination of truth. On the other hand, the intellectual impulse contributes materially to social existence and improvement. For it lies at the basis of the purely intellectual and cultural activities and institutions of society, such as museums, and literary, historical, and scientific associations, and it is no small factor in all that is included under the term, "the press."

(*e*) The artistic impulse. — The artistic impulse is to be identified with our instinctive appreciation of beauty. A distinction must be made, of course, between the impulse and what is regarded as beautiful. For, although there are no universally recognized standards of beauty, all peoples appreciate the beauty of some things and create what to them is beautiful.

[1] James, *Psychology*, Vol. ii, pp. 408–409.

The utility of the artistic impulse lies in the fact that it prompts the individual to activities beneficial to himself and to others. The fine arts, particularly in their earliest development, served this end. Dancing, poetry, and music, arising from the instinctive appreciation of beauty and from the tendency to act so as to attract others, were, on the one hand, a source of pleasure to the individual, and on the other, a medium of inculcating common thoughts and feelings, common ideals and habits, all of which conserved higher modes of social life and contributed to the welfare of both the individual and the race.

This appreciation of beauty and this tendency to act in ways attractive to others fostered also the ornamentation of the person and of related things, such as weapons, tools, and utensils; strength, too, was added to the custom through these decorations serving as signs of communication and distinction and as means of inspiring fear.

Architecture, sculpture, and painting had a like origin, springing from the pleasure the individual derived from their creation and contemplation, and from his effort to attract those in position and power, or to honor and appease some departed spirit. In the hands of those in authority, these came later to be employed as instruments to increase their prestige and power, while with the clergy architecture, sculpture, and painting served as a means of teaching truth, of moulding sentiment, and of inspiring respect and obedience.

Such is the general utility of the artistic impulse. Its function, in view of its utility, is therefore to enrich the life of the individual, and to promote higher forms of social life. By rendering the individual appreciative of beauty, it increases the volume of his pleasure and exposes

him to cultural influences; while under the impulse to artistic production, the artist exerts an elevating and unifying force upon others and thereby contributes to social solidarity, the primary function of art.

The artistic impulse is not so strong as some of the older impulses, nor is it so definite in its modes of reaction and expression, yet it is quite as constant in its promptings. From its relationship to the impulse of self-preservation, race-preservation, and sociality, it does not manifest itself fully, until these attain a reasonable maturity. In early childhood, the æsthetic sense is largely sensory, and the child delights in colored objects and pictures and in their creation, in music and poetry with a pronounced rhythm and in their rendition, but finds æsthetic pleasure in little else. His idea of beauty depends largely upon what is physically agreeable. There is no decided change in his taste or any marked interest in artistic production until the beginning of puberty, when within a night, as it were, there is born a pride and a delight in his own appearance and in the appearance of the other members of the family and of the home. With the rising forces of adolescence, there is also an added tendency toward artistic creation and a growing love for music, poetry, painting, architecture, and sculpture.

The full import of the artistic impulse has not as yet been recognized. Nevertheless, on the part of the individual it yields to him experiences that make up a considerable part of the pleasures of life. For those especially endowed, a line of activity is opened which may lead into any one or into all of the fine arts and enable those thus favored to become benefactors of the race. On the part of society, it is the source of one of its phases, giving rise

to all that has to do with fostering the artistic sense and increasing the enjoyment of beauty, such as, for example, art galleries and museums, conservatories of music, art displays, and concerts. It also affects and contributes to almost every other phase, for note the place of art in industry, in religion, and its influence upon social intercourse in general. Furthermore, it is the primary medium of giving permanent expression to social ideals and, in the hand of society, is a powerful means in elevating the thought and unifying the purposes of the masses, in exalting the dignity of office and of institutions, and in securing respect and obedience to social decrees.

(*f*) The moral-religious impulse. — Under the moral-religious impulse is to be brought the instinctive tendency to do what is approved, the instinctive sense of obligation in the presence of duty, the longing to realize a moral ideal and to bring the self into harmonious relation with the Divine Will.

With reference to the instinctive character of morality, Sutherland[1] writes, "The moral instinct, . . . is, in social animals, the result of that selective process among the emotions which tend to encourage those that are mutually helpful, and to weaken those that are mutually harmful." Stephen[2] says, "Children, no doubt, start with infinitely varying aptitudes for moral culture." Perez is of like opinion. "The moral sense, then," says he,[3] "is one of the hereditary faculties most liable to be modified by circumstances."

Similar high authority may be quoted with respect to

[1] Sutherland, *Origin and Growth of the Moral Instinct*, vol. ii. p. 304.
[2] Stephen, *Science of Ethics*, p. 419.
[3] Perez, *First Three Years of Childhood*, p. 287.

the instinctive character of religion. "Religion," writes Bender,[1] "is that activity of the human impulse toward self-preservation by means of which man seeks to carry his essential vital purposes through against the adverse pressure of the world by raising himself freely towards the world's ordering and governing powers when the limits of his own strength are reached." Marshall[2] maintains that, "Religious activities are the expression of a true instinct, which we may properly speak of as a religious instinct."

The function of the moral-religious impulse is to subordinate impulses of individualistic import to those having social significance. The utility of such an impulse to society is great. The older nations found religion the most powerful instrument in curbing individualism, in inculcating respect for custom and law, and in inspiring courage and self-sacrifice, whereas in all civilized societies of the present it is the chief means of quickening the conscience, of instilling ideals, and of holding men to their realization. On the other hand, the moral-religious impulse has great worth for the individual. The expression, "Man's extremity is God's opportunity," is a potent truth. For, when man is in distress and is driven into surrender and sacrifice, he finds help in religion. Under the stress and burdens of the world, he cries out for repose and a richer life, and to give this more satisfying life is the function of religion. Furthermore, the fruits of the moral-religious impulse — contentment, purity, charity, self-control, love — are qualities essential to the highest personal living.

[1] Quoted from James, *Varieties of Religious Experiences*, p. 507.

[2] Marshall, *Instinct and Reason*, p. 217.

The moral-religious impulse makes its appearance somewhat late in the development of the child. Yet the moral instinct appears in an objective sense of right and wrong surprisingly early, though it does not become strong and active, even within the range of the child's own world, much before the age of five or six. Just when the child's heart is first stirred by the religious impulse is hard to say, and it is more difficult to tell whether the early religious thoughts and actions of children are merely imitative or whether they are accompanied by genuine religious emotions. Starbuck [1] is inclined to think the earliest of these are external and lack meaning. The mere putting of religious questions and the mere imitation of religious activities, to say the least, begin about the fourth year and continue with increasing frequency, and whatever question there may be about the presence of the religious impulse during these earlier years, there can be none after the age of twelve or fourteen. This marks, beyond doubt, the beginning of genuine religious life and the period when the moral-religious impulse is most active and its impelling force almost irresistible.

The significance of this impulse is too well understood to need discussion. Morality and religion lie at the foundation of society and influence its every aspect. To the individual, they open a source of life from which he draws his highest inspiration and his most sustaining hope. In a word, as Professor James puts it, "Society and the individual without morality and religion would be like the body void of the spirit of life."

4. *Primary Characteristics of the Will.* — Such are the constituent elements of the human will, and such are

[1] Starbuck, *Psychology and Religion*, pp. 28–48.

certain of their characteristics. It remains to point out those characteristics that are primary.

First, the primal impulses — the elements of the will — impel the individual to activity, though in but few instances is this propulsion so definite in man as in animals. With the latter, the coördination between inherited tendencies and motor centers is practically fixed before birth, and the appropriate action is performed under the stress of instinct. As an illustration, take the migratory or the nest-building instinct of the bird. Still, the primal impulses do constrain the individual to well-defined modes of action, give rise to definite needs, and as such are to be viewed as psychic forces which constrain to action.

Second, as psychic forces, the quantity of the force exerted by the primal impulses may be increased or decreased. This may be decreased through certain of their transitory forms, as instincts, ripening, expending their energy, and fading away; or it may be decreased through long periods of inhibition and consequent disuse. The case of Darwin, who lost his interest in art, is in point. In a word, the primal impulses are subject to the "law of disuse," and, through failure to give an impulse appropriate expression, the force exerted by it may be reduced to a minimum. On the other hand, they are subject to the "law of use," and, through indulgence or free expression, the quantity of propulsion exerted by any one or by all primal impulses may be increased. Witness the religious enthusiast, the devotee of art, the savant of science.

Third, the primal impulses will find expression, but the mode of this is subject to control and direction. Human beings are endowed with the impulse of self-preservation, but whether they subsist like Fuegians or Americans is

not a question of impulse but of how this impulse is expressed, or their physical needs satisfied. The Greenlander and the Italian are gifted with artistic sense, but whether a crude carving of an arctic animal or a Sistine Madonna is created, depends upon the direction given the tendency. Likewise, as with all impulses, their expression is subject to modification and guidance.

Fourth, like all forces, the elements of the human will are in themselves blind; they merely impel the individual to action. Fear, for example, — a form of the impulse of self-preservation, — may cause the individual to take to his legs, but of itself it brings forth no artificial means of defense; hunger, a second form, dooms him to search for food, yet of itself it tames no animals, cultures no fruits, tills no fields; cold, a third, drives him to seek shelter, but like fear and hunger it builds no houses, manufactures no clothes. The artistic impulse constrains him to artistic production, but it reveals no worthy object, except indirectly as the artistic sense is satisfied by a given creation. Independent of other influences, the primal impulses are, therefore, mere blind forces condemning the individual to a life of activity, but the ends toward which this activity must be directed to the greatest advantage are supplied from other sources.

5. *The Will and Life.* — Notwithstanding impulses are but blind forces constraining to action, they determine the principal forms or phases of life. Sentient creatures, for example, are endowed with the impulses of self- and of race-preservation, and are thereby predisposed to ways of life, conducive to the conservation of the self and to the continuation of the race. Those organisms gifted with a social tendency live in groups, whereas those more or less

devoid of the social impulse seek isolation. So invariably is life conditioned by impulse and so deep-rooted are even certain human tendencies, that Sutherland is able to find traces of morality among the higher animals, and Romanes is inclined to think that among them forms of fetichism are also to be found. Each impulse thus calls forth a given line of action, and the different phases of human activity to which the primal impulses constituting the human will give rise may be characterized as the industrial, the social, the intellectual, the artistic, and the moral-religious.

The primal impulses, as the elements of the human will, not only condition the forms or the phases of human life, but also the character of these with respect to both knowledge and action. Viewing life chronologically, Paulsen[1] says: "Knowing nothing of life and its content, this germinal will keeps on generating new impulses; they follow each other like the impulses of a plant; the impulse to walk, to climb, to speak, to play with horses and soldiers, or with dolls and clothes, to build or to cook, to hear and to tell stories, and to see and to understand things. Then at last, at the end of boyhood, the love of the other sex suddenly breaks out as a new, unheard-of impulse, and for a time constitutes the fundamental theme of inner life. Gradually the impulses of manhood force themselves into the foreground; work and acquisition, position and fame for himself and his children become the great topics of a man's life, until finally, involution begins and death closes the account." James gives expression to the same thought: "With the child, life is all play and fairy-tales and learning the external properties of 'things'; with the

[1] Paulsen, *Introduction to Philosophy*, p. 116.

youth, it is bodily exercise of a more systematic sort, novels of the real world, boon-fellowship and song, friendship and love, nature, travel and adventure, science and philosophy; with the man, ambition and policy, acquisitiveness, responsibility to others, and the selfish zest of the battle of life." This dependence of the content of the different phases of human life upon the primal impulses is doubly emphasized, if the effect of the lack of proper expression or of mal-expression of their various forms is observed. When such has been the case, there are great barren and desert gaps in the life of the individual, great blocks of the content of a well-rounded development are missing, and these can never be restored, however favorable later conditions may be.

6. *The Place of the Will in Life.* — The place occupied by the will in human life may now be brought to view, if in thought one after another of the elements of the human will is withdrawn. Deprive the individual, for example, of every vestige of the moral religious impulse, and all moral and religious activity or the whole phase of moral and religious life is closed to him. Erase every trace of the artistic impulse, and the individual is dead to all that falls within the category of the beautiful. Put out every spark of the intellectual impulse, and only that of immediate utility is of interest. Take away every tendency to sociality, and you have the ideal hermit. Kill every stirring of the impulse of race-preservation, and the celibate exists in reality. Deaden that of self-preservation in all of its forms, and there remains nothing but a lump of inanimate clay. The individual deprived of the will, even though he possessed self-consciousness and all that it implies, would be as inactive, cold, and disinterested as

the statue carved in his image. But reverse the process, and with the introduction of each primal impulse there are added new energies, new needs, new interests, new motives, — a basis for a new line of activity, — and with the addition of the last, he is endowed with the elements opening to him the whole range of human life. In view of what the individual is with his will constituted as it is and of what he would be without it, the will can occupy none other than the place of primacy in the psychical life of the individual.

To assign to the will the place of primacy in psychical life is no new thought. This has been done since the days of Aristotle. With reference to this point Schopenhauer[1] says, "The will is the inner, true, and indestructible essence of man. . . . It is the primary phenomenon of the organism." "The original fact of every soul-life," writes Paulsen,[2] "is a concrete, definitely determined will. The original form of the will is impulse."

§ 4. The Intellect

1. *The Meaning of the Intellect.* As with the will, so with the intellect, — the most helpful conception for the teacher is gained from considering the latter in its relation to life. When thus regarded, the intellect is the medium through which life comes to know itself and its ends, to know the conditions environing it and the means contributing to the achievement of its purposes. As such a medium, the intellect is not something apart from life; it is life revealing itself unto itself. Although a manifestation thereof, the intellect is not commensurate with

[1] Schopenhauer, *Fourfold Root and Will in Nature*, p. 236.

[2] Paulsen, *Introduction to Philosophy*, p. 119.

life, for life is more than the intellect. Indeed, life is well up in the higher orders before the intellect is to be found in other than its simplest forms, and it is only in man that it appears in its highest development. The intellect may then be defined as life in its cognitive or knowing aspect.

2. *The Intellect and the Intellectual Impulse.* — As thus defined, the intellect is to be distinguished from the intellectual impulse. The latter, to be sure, is vitally related to the intellect and directly influences mental activity. Still, the one is no part of the other, for the two belong to different aspects of life: the one to its knowing or cognitive, the other to its dynamic aspect; the one is a source of propulsion, the other, of impressions and ideas. Being a source of knowledge and not of propulsion, it is therefore incorrect to think of the intellect as one of the forces of life. For it "is not a power," in the words of Spencer, "but an instrument — not a thing which itself moves and works, but a thing which is moved and worked by forces behind it."

3. *The Intellect as the Medium of Direction and Control.* — Though an instrument, the intellect fills an important office. On the one hand, it is the medium which supplies life with the means of directing its impulses in their expression in action. Under the sole dominion of impulse, the individual is driven about at random, like an engine under a full head of steam without the guiding rail, or like a ship under full sail without a helm. But what the rail is to the engine, or the helm to the ship, the intellect is to life. The individual, to illustrate, is moved to action by hunger, but this of itself reveals no means of gratification; it is the intellect alone that does this. Again, he is stirred by the impulse of sociality, and the intellect

evolves modes of social intercourse adapted to its expression and satisfaction. By the intellect being the medium of direction, we mean, then, that it yields to the individual such insight into ends, and supplies him with such knowledge of means, that he is able through the direction of action to give a desired expression to his impulses; to give such expression to the constructive instinct, for example, that a wigwam or a canoe is made according to his desire.

On the other hand, the intellect is the medium which supplies life with the means of controlling the expression of its impulses. The primal impulses are in the early part of child-life under no conscious control. In consequence, these impulses are often at war with each other and the child is at the mercy of the strongest. Impulses must, however, be controlled, that is, in a given situation a particular tendency should be given free expression, in another it should be inhibited. It is the intellect that enables the child to do this. For example, he is impelled by the fighting instinct to fight, but in view of his knowledge of the unpleasant consequences of such action, the tendency is inhibited. Or he is constrained by the acquisitive instinct to collect some shells, and in view of his knowledge of the pleasure to be derived, the impulse is confirmed and the shells collected. By the intellect being the medium of control, we mean, then, that it supplies the individual with such insight into values, that he is able — in view of the recognized worth of the experience to be derived from putting a particular impulse into active expression — to confirm or inhibit it.

4. *Levels of Direction and Control.* — Impulses are directed and controlled upon four different levels. These

levels correspond to the four stages in the development of self-conscious life, and may be characterized as the assimilative, the perceptual, the conceptual, and the systematic levels of direction and control. We are interested more particularly in the perceptual and the conceptual.

5. *The Intellect and Direction and Control of Impulse on the Perceptual Level.* — The basis of the direction of impulse upon the perceptual level is the concrete idea or concrete idea-whole. Examples may be observed among young children. Preyer's child in its seventeenth month wanted his toys. Remembering that they were in a cupboard and failing in trying to reach them, he brought a traveling bag, got upon it, and secured them. The child was moved to action by the play instinct; the memory of his play-things and where they were gave rise to the desire to get them, and his activities were consciously directed to that end on the basis of a memory idea of how he or others obtained things they could not reach. The later imitative activities of children are also illustrative of this type of direction, such as are to be seen in the playing of house-keeping, groceryman, deliveryman, policeman, or Indian; likewise are the activities of children as manifest in the dramatization of stories and in the making of such objects as a wigwam, water-wheel, or flower-stand. In such cases, the child is moved to action by the play, the artistic, or the constructive instinct, and the given impulse is directed in its expression in action upon the basis of a concrete idea or concrete idea-whole of what the groceryman, deliveryman, or policeman does, or upon the basis of a concrete idea-whole of the separate scenes of the story, or of how a given object looks and is made.

The control of impulse on this level presupposes, on the

other hand, concrete knowledge of particular needs and of the value of their satisfaction, or concrete knowledge of the particular value of the experiences resulting from the expression of a given impulse in a given way. The child's knowledge, on this level of development, of his needs and of the value of his experiences is of course incomplete, yet it is sufficient to supply the basis for the rise of motive and for the simpler forms of control. To illustrate, the child is moved by hunger to eat a green apple, but in view of his concrete memory idea of the previous effects of so doing, the impulse is inhibited; or he is moved to play with a dog, but in view of his knowledge that this dog bites, the impulse is controlled. Or he is tempted, on the one hand, to spend the afternoon in playing baseball and, on the other, to spend it in making a siphon. On reflection, he decides that the pleasures to be derived from the first plan have greater worth to him than those to be obtained from the second; the latter impulse is therefore inhibited and the former given free expression in action.

The direction and control of impulse on this level thus involves concrete ideas or idea-wholes of things, needs, and values, and it is in making possible the acquisition of such concrete knowledge that the intellect serves as the instrument of perceptual direction and control.

6. *The Intellect and Direction and Control of Impulse on the Conceptual Level.* — On the conceptual level of self-conscious life, there appears the power of conceptual thought. That is, there is the ability to bring a mass of experiences into relation to a single interpretative idea, or to analyze a number of similar percepts or concrete ideas into their essential and non-essential elements and to fuse those found essential into a concept or general idea.

Certain products of conceptual thinking are of special interest here. First, it is through this mode of thought that we arrive at our knowledge of physical and biological laws. Second, through it, we come to conceive of ourselves and of others as permanent selves, as having permanent needs and interests, and as bound to conform our actions to certain well-defined principles of conduct. It is also through conceptual thought that we attain a general idea of society, of its institutions, customs, and laws.

From these illustrative products of conceptual thinking, it is obvious that the basis of direction on the conceptual level is different from that on the perceptual. There is a transition from concrete ideas or idea-wholes of particular cases or experiences to law, principle, or ideal. For example, the Indian, moved by the fighting instinct, aims an arrow directly or indirectly according as the threatening foe is near or far; he holds it in this way because he has seen other arrows, when thus aimed, hit the desired mark. The trained Japanese artilleryman, moved by the same instinct, aimed the cannon at the Russian warships in the harbor of Port Arthur not as he had seen others do it, but in accord with the principle of the correlation of forces. The mother bird, moved by the parental instinct, cares for her young as the particular occasion demands; on the other hand, the human mother, impelled by the same impulse, cares for her child, but the care and attention given it are determined not only by the concrete idea of its present needs, but in view also of certain principles of hygiene and education.

In a similar way, concepts, principles, and ideals serve on this level as the basis of control. As suggested, the individual is able through the power of conceptual thought

to conceive of himself and of others as having fixed needs and interests. In possession of these conceptions, he is able to subordinate temporal to permanent needs, present to future ends; in short, he is able to bring his impulses into permanent relations with one another — bring them into a system. To illustrate, stimulated by the acquisitive instinct, one may be tempted to steal, but in view of insight into his relations to others or in view of certain ideals of conduct, the tendency is inhibited. Or one may be moved by the impulse of self-preservation to devote his energies to the acquisition of wealth only, but because of other permanent interests or ideals of life, the impulse is controlled.

The direction and control of impulse on the conceptual level implies, then, a knowledge of the laws and principles of the physical world, and of the nature and permanent interests of the self and of others. It is the intellect that renders possible the acquisition of such knowledge, and in doing this it serves as the medium of conceptual direction and control.

7. *The Function of the Intellect.* — When regarded as the instrument of direction and control, the function of the intellect is not far to seek. It is to enable life to give expression and determination to itself. This implies, on the one hand, that through the intellect the individual is able to interpret in terms of life the meaning and worth of the dynamic elements of his nature, and able in the light of this interpretation to formulate an end or goal of life, such that each primal impulse is assigned therein the position best adapted to the fulfillment of its office, and so controlled as to contribute most to the richness of life. It implies, on the other hand, that through the intellect the individual is able to gain such insights into his natural and social surroundings, that he is supplied with

the means of giving such expression and direction to his impulses as will yield to him the highest self-development.

8. *The Significance of the Intellect for Life.* — From this point of view, the primary significance of the intellect lies in the fact that it renders the individual self-conscious. For, though life seeking expression is embodied in its dynamic elements or in the primal impulses, self-consciousness conditions the actualization of life. Deprive the individual of self-consciousness and he remains submerged in impulse, buried in the present, and indifferent to the future, save as moved by instinct. But endowed with self-consciousness, he becomes conscious of worthy ends, conscious of the means of attaining these, and able to become master of himself within the limits of his physical, intellectual, and impulsive nature.

Again, the significance of the intellect is to be seen in the fact that it enables the individual to free himself from bondage to natural environment. In the life of animals, natural environment is the determining factor. Change in physical surroundings necessitates change in the organism or in mode of life, and no modification can be made in the latter which is not compatible with the former. For example, herds of buffaloes roamed over the territory west of the Mississippi until toward 1873. With the transformation of this region from a natural grazing section into an agricultural country, the buffalo disappeared because he was unable to prevent this change or to adjust himself to it. On the other hand, human beings are able, through the intellect, to bring about alterations in their physical surroundings and to adjust themselves to changes that may occur independent of them. Animals are thus at the mercy of natural environment, whereas human beings

by virtue of their intelligence, are at least partially freed therefrom, and able, within limits, to make their environment serve their purposes.

A further point of significance lies in the fact that the intellect frees the individual from bondage to heredity. Animals are in almost complete bondage thereto. A given animal lives in the way it does because the lines of activity determined by its impulses proved beneficial to its ancestors. The life of one animal is in consequence much like that of others of the same kind, and this is quite like that of their forebears. Indeed, it is only in man that we find hereditary predisposition decidedly modified and the life of the individual differing radically from that of his ancestors, that we find life determined less by heredity than by the individual himself. The life the individual lives is conditioned, to be sure, by heredity as this manifests itself in the primal impulses, but through the medium of his intellect he is able to bring to bear upon the direction and control of these inherited tendencies his own experience and the experiences of the race, and is thereby able, within limits, to free himself from the domination of heredity.

9. *The Intellect a Servant of the Will.* The intellect, however, despite its significance, is the servant of the will. Needs arise from the will as embodied in the primal impulses, and the intellect finds ways of satisfying these; from the will spring interests and ends, and the intellect provides means of gratification and attainment. As James[1] says: "The cognitive faculty, where it appears to exist at all, appears but as one element in an organic mental whole, and as a minister to higher mental powers — the powers of will."

[1] James, *The Will to Believe*, pp. 140–141.

The intellect is not only the servant of the will, but in its service it is not at liberty to do things in its own way. Perception is, for example, controlled by the will; it does this through controlling attention. Though myriads of stimuli from the outer world beat upon the sense organs, only those sensations are worked over into percepts to which attention is given because of some special interest. The will likewise controls memory. An experience of importance is grasped as in a vise; while the same event stripped of its significance fades from memory with the passing of the day. The trains of our ideas are also subject to the will, for the immediate needs of life constitute the center about which thoughts for the time revolve, change the need, and the ideas within the stream of consciousness are altered. The same is true of reason. Be committed to a line of action, and reason at once finds grounds for it. Indeed, the will even lays its determining hand upon judgment. This is seen in practical life, where there are as many answers to a question as there are interests at stake; take, for example, "State Rights," "Slavery," "Free Silver," "Campaign Contributions." It is to be seen also in science and literature, and in philosophy and religion. The intellect is thus dominated in its activity from the lowest to its highest modes by the will. It must not only do the work of the will, but do only what is prescribed by the will.

10. *The Place of the Intellect in the Life of the Individual.* — Yet the intellect occupies no mean place in the life of the individual, for without its service the larger life as manifest in the will would never be actualized. Still, the larger life as embodied in the will and the will as the larger life-seeking actualization are of more importance than that

which serves as a means of this larger life. In consequence, the intellect is to be viewed as a secondary aspect of the psychical nature, as subordinate to the will, and is to be assigned a place of secondary importance in life.

This is in accord with Paulsen: "The will," he writes, "is the original and, in a certain sense, constant factor in soul-life. . . . Intelligence is the secondary and variable factor. . . . Everywhere the understanding is an instrument in the service of the will and surveys the environment in order to discover how the will may reach its end in the best and easiest manner. . . . The will is the architect who determines the form and style of the building; the intellect simply executes the plan." [1]

§ 5. Knowledge

With the function and place, in the life of the child, of both the will and the intellect determined, it remains, if we would understand his psychical nature as a whole, to consider the fact of knowledge.

1. *The Determination of Knowledge.* — One would naturally infer that the nature of knowledge is determined by what is to be known, by things as they are. If this were true, all persons would have the same idea of the same thing, of the same occurrence or event. But they have not. Take as an illustration an act, an accident, an event in history, or the different ways in which a simple thing like a piece of clay may be regarded. As a matter of fact, our knowledge is determined neither by the thing to be known nor by the intellect in itself, but it is determined more especially by the needs of life seeking expression and actualization in the will. To illustrate, the sensations

[1] Paulsen, *Introduction to Philosophy*, p. 115, 117.

presenting themselves to consciousness are without meaning. The will presses the intellect to give these significance in terms of life. Of these sensations, it is personal interest that determines the ones to which attention shall be directed. Again, of the sensations thus emphasized, it is utility that decides which shall be combined, taken as signs of a given object and as representing its simple qualities. The further analysis of the concrete ideas thus formed, the fixing upon their common and essential elements of meanings, and the fusing of the elements found common and essential into a concept is likewise done on the basis of the relation of the selected elements to the needs of life. In truth, "the whole function of conserving, of fixing, and holding fast to meanings, has no significance apart from the fact that the conceiver is a creature with partial purposes and private ends." Destroy the will with its biases and preferences, and there remains no motive for gaining knowledge. The will, however, exists, the practical interests of life make themselves felt, and sense experience is interpreted and ordered as it contributes to life, and though no such classification exists in the external world, one group of what is accepted as knowledge is dubbed science, another art, another history, according as this or that scheme best suits the purposes of the will.

2. *The Function of Knowledge.* — In view of its determination, the function of knowledge is to serve the purposes of life. Speaking for the moment as if it existed independent of the intellect, knowledge fulfills its function through serving as the means of revealing ideals or ends of action, — hence of controlling impulses, — and through serving as the medium of supplying the means of

so expressing and directing impulse in action that cherished ends may be achieved.

Before the individual can accept an ideal as his own and endeavor to conform his life to it, he must be conscious of the ideal and of its implications. To be conscious of an ideal and of its meaning is to have knowledge of the ideal. No small part of our knowledge is of this kind. Such knowledge serves its function when in and through it the individual comes to appreciate ends of action.

An end, however, implies means, that is, the realization of a given ideal involves knowledge which serves as the basis for directing action in its attainment. Knowledge of an end does not always carry with it insight into means. The two may arise in the mind together, but as a rule the end is first recognized and the means necessary to its attainment acquired later. This is true in industry, in intellectual work, in art, in life in general. We have, then, a second type of knowledge which may be designated knowledge of means. Through this type of knowledge, the individual comes to know the activities involved in the achievement of a given ideal and is supplied with the basis of so guiding and directing impulse in its expression in action as to attain the given end.

The line between knowledge of ends and knowledge of means cannot be sharply drawn, for that revealing an end in one case may, in another, serve as means. Nevertheless, this classification has practical value and goes to the heart of the problem of curriculum making.

3. *The Function of Knowledge and of the Intellect.* — The function of knowledge, when thus conceived, is the same as the function of the intellect when viewed as the instru-

ment of direction and control. The grounds of this similarity are easily discovered. The intellect has a form, that is, it manifests itself in different modes of psychical activity, as in attention, memory, imagination, and reason, and it has a content. Knowledge, being the product of intellectual activity, is the intellect on the side of content, and the function of knowledge must necessarily be the same as the function of the intellect when this is regarded only from the side of form. The function of the intellect is therefore not one thing from the point of view of form and another thing from the point of view of content, for the intellect has, when taken as a whole, but one function, namely, to supply insight into ends and insight into means, these insights to be employed in the expression, direction, and control of impulse.

4. *The Place of Knowledge in Life.* — By reason of its function, knowledge is of no slight significance. Yet, however significant, it is but the means to the expression and actualization of life. Knowledge is not, therefore, an end in itself, nor is knowledge to be acquired for the sake of knowledge. For apart from the practical needs of life, there are no reasons why we should acquire it. Hence we are only interested in knowledge in so far as it contributes directly or indirectly to life.

In view of the fact that knowledge is merely a means to an end, it is of secondary importance. Though, from its relation to the intellect, — a part of which it is, — knowledge is to be regarded as coördinate with the intellect on the side of form, it is to be considered secondary to the will, and to be valued only as it furthers life's purposes. For we learn that we may act, and we act that we may live more abundantly.

§ 6. Educational Inferences

From the conclusions reached in the study of the psychical nature of the child, we are in a position to draw certain inferences which will serve both to bring these conclusions into relation to education and to make clear the source and implications of two principles.

1. *The Child, an Impulsive, Rational Being.* — In view of his psychical nature, the child is primarily an impulsive and only secondarily a rational being. He is not, therefore, to be regarded as passive, receptive, and static, but as essentially active and dynamic, and he is not to be viewed as moved to action from without, but as impelled to it from within.

2. *Life Determined by the Will.* — By reason of the character of the will, of its significance and place in life, the life attained by the child, on both the side of form and of content, is determined by the expression and direction given, and by the control exercised over the will or the primal impulses.

3. *Life Conditioned by the Intellect.* — In view of the function of the intellect, the expression and direction given the will, and the control exercised, and consequently the life attained by the child, are conditioned by the ideals of life and by the means of expressing, directing, and controlling impulse in action as revealed by the intellect.

4. *Will Development and Primary Work of Education.* — From the character of the constituent elements of the will, will development consists in giving higher and higher expression and direction and in exercising more and more appropriate control over the primal impulses. By reason

of the place of the will in life, will development becomes the primary work of education.

5. *Intellectual Development and Secondary Work of Education.* — In view of the nature of the intellect and of its function in life, intellectual development consists in the rise of higher and higher modes of mental activity, which make accessible to the child higher and more comprehensive ideals of life and better and more abundant means of directing and determining the will in its expression. By reason of the place of the intellect in life, intellectual development becomes the secondary work of education.

6. *Intellectual Development Conditioned by Will Development.* — By reason of the respective functions of the intellect and of the will, and by reason of the relation of the former to the latter, the development to be given the intellect, both on the side of form and of content, is conditioned by the expression and the direction to be given and by the control to be exercised over the will.

§ 7. Educational Principles

If these inferences are brought together, we have, arising out of the nature of the psychical life of the child, these principles:

1. The giving of appropriate expression, direction, and determination to the will — or the development of the will — constitutes the primary work of education, the end to which every phase of it must contribute and be subordinated.

2. The development of the intellect is the secondary work of education, and the intellect must be so developed with respect to both form and content, and only so developed, as to give the will the necessary expression and the desired direction and determination.

Readings

Kirkpatrick, *Fundamentals of Child Study*, pp. 51–245.
Perez, *First Three Years of Childhood*, pp. 60–98, 203–279, 285–292.
King, *Psychology of Child Development*, pp. 172–288.
James, *Talks to Teachers*, pp. 39–63, 22–27.
Ward, *Outlines of Sociology*, pp. 109–110, 182–185.
Baldwin, *Ethical and Social Interpretations*, pp. 247–250, 437.
Angell, *Psychology*, pp. 137–140, 215, 246–248.
Seth, *Fourth Year Book of National Herbartian Society*, pp. 7–25.
Thorndike, *Educational Psychology*, vol. i, pp. 50–169.
Betts, *Social Principles of Education*, pp. 133–191.
Ellwood, *Sociology in its Psychological Aspects*, pp. 199–277.
McDougall, *An Introduction to Social Psychology*, pp. 265–351.

CHAPTER IV

THE PSYCHICAL DEVELOPMENT OF THE CHILD

§ 1. The Problem

The education of the child not only implies insight into the nature of his psychical life, but also presupposes knowledge of how he develops. Our next task is therefore to examine the nature of the process in and through which the child develops psychically.

§ 2. The Factors that Develop

The first of the factors that develop is the will. Its constituent elements, the primal impulses, are, in their undeveloped state, without content and find expression apart from conscious control and direction. Yet in these impulses are hidden the germs of human needs, the well-springs of human action, and the possibility of rational conduct, for in the course of the child's development they are given content and subjected to guidance.

The second factor is the intellect. On the side of its form, there are the functions of attention, dissociation, association, memory, imagination, perceptual and conceptual reasoning, and it is these modes of cognitive activity that develop. On the side of content, there is sense-experience, and this is broadened and deepened, and worked over into different kinds of knowledge.

§ 3. Periods in Psychical Development

1. *Basis of Determination.* During a greater part of the seventeenth century, the child was looked upon as a "little man," that is, he was thought of as being like an adult, except that he was smaller in body, and weaker in intellect and will.

If the "little man" theory were true, the psychical development of the child might be regarded as a whole, and development viewed as merely an increase in psychical power. As a matter of fact, the child is not like the adult in his mental and will characteristics. The character of his intellect and of his will change from time to time. The mental powers and the manner of thinking distinctive of an early period are different from those characteristic of a later one; the impulses seeking expression in infancy are not the same as those dominating youth. For this reason, the psychical development of the child falls into distinct periods, and the basis of fixing upon these lies in the recognition of differences in the will and intellectual life of the child at different stages in his development.

2. *The Periods of Development.* — The periods in the psychical development of the child have been designated, from time out of mind, as the period of infancy, that is, from birth to the middle of the second year; the period of childhood, to the eighth or ninth year; the period of boy-girlhood, to about fourteen for boys and to about thirteen for girls; and the period of youth.

In view of our idea of the primary work of education, it is preferable, we believe, to characterize these periods in terms of the stages in the development of the will.

When this is done, we have the period of the assimilative will corresponding to infancy, the period of the perceptual will paralleling childhood, the period of the conceptual will extending over boy-girlhood, and the period of the conceptual and rational will covering youth and adult life.

Although the development of the child is to be viewed as falling into these periods, they are not to be regarded as distinct each from the other, but to be thought of as marking stages of progress in a process which is a continuous whole. For there is no break between them, the one glides imperceptibly into the other, and the development begun in the one is continued in the next, although in a more or less modified form. Nor are these periods to be viewed as unrelated, but as vitally inter-related and each conditioning the other. For lack of development in an earlier period manifests itself in the later, and no amount of after training will wholly efface the effects. In consequence, the highest development in any later period presupposes a normal development in each preceding one.

3. *Will and Mental Elements of Different Periods.* — Of the four periods in the psychical development of the child, we are especially interested in the periods of the perceptual and of the conceptual will.

In the period of the perceptual will, or of childhood, the distinctive elements and those with which the teacher has to work are, on the side of the will, the instincts of fear, anger, pugnacity, selfishness, hunger, cold, acquisitiveness, the constructive instinct, sympathy, the social instinct, imitation, play, curiosity, and the tendency to talk, also the instinctive appreciation of form, of color, and of rhythm, and the instinctive sense of obligation, justice, and right. With respect to mental elements, there

are present, of the cognitive functions, attention, dissociation, association, memory, imagination, and especially the power of perceptual reasoning. While on the side of mental content, the child possesses a rudimentary knowledge of his natural surroundings, which he views, in the main, as made up of objects having little connection, and known more especially with reference to how they can be used and what they can do; he also has some little knowledge of himself and of his needs. The child, however, in so far as he has such ideas, on this level of development thinks of himself, as well as of others, as having a body, as being able to do certain things, as having certain likes and dislikes, and as having certain needs that demand immediate satisfaction. This knowledge of the self, of others, and of the world is held by the child in the form of concrete ideas, or picture wholes, and it is the expression, control, and direction of impulse in the light of and upon the basis of such knowledge that is characteristic of the perceptual will and of this stage of development.

In the period of the conceptual will, or of boy-girlhood, the elements on the side of the will are, on the one hand, those instincts of childhood that continue to impel to action, such as pugnacity, selfishness, hunger, cold, imitation, play, acquisitiveness, and the constructive instinct, and, on the other, those instincts more especially distinctive of boy-girlhood, such as the social and group instinct, increased curiosity and growing love of knowledge, a broader interest in the beautiful, a deeper sense of right and justice, and at least the early stirrings of the religious impulse. On the side of the intellect, there become active, in this period, the more developed aspects of attention, association, dissociation, memory, imagination, and espe-

cially conceptual reasoning. The transition from perceptual to conceptual thought brings about a change in the child's view of the world as a mere collection of relatively separate things, and he comes to regard things as possessing essential attributes, as the expression of principles. The external world thereby takes on an orderly appearance, and type and law are recognized as fundamental and controlling. A similar change occurs in the child's idea of himself. He comes to regard himself, and likewise others, as a permanent, feeling subject or person, with fixed needs, interests, and ends, and with a more or less definite mission to accomplish. This view of the world, of others, and of the self is embodied in concepts or general ideas, and it is the expression, control, and direction of the impulses of boy-girlhood in the light of principles and ideals that distinguishes the conceptual will and is characteristic of the conceptual period of development.

§ 4. The Process: The Acquisition of Knowledge

Whatever else the process may be in and through which the child develops psychically, it is one in and through which he acquires and makes use of knowledge. An appreciation of how the child develops psychically implies, in consequence, an examination at this point of at least the general characteristics of the process in and through which the child gains knowledge.

1. *The Meaning of Experience and of Knowledge.*— "Experience," writes Morgan,[1] "is a matter of impressions and the directly presentative elements of consciousness. For every sense-idea we must have had direct experience of the corresponding sense-impression; for every motor-

[1] Morgan, *Psychology for Teachers*, p. 49.

idea, a motor-impression; for every idea of relation, a basis in practical experience." By experience is meant, then, the sensations or the impressions gained directly from the excitation of the so-called five senses. Though the sensations or impressions secured from the sense organs are never wholly without meaning and value except in infancy, they do not of themselves yield us knowledge; they are merely the materials that may be worked over into it. Knowledge is consequently nothing more or less than experience, the impressions gained from the senses, given meaning and value. The process through which experience is acquired and worked over into knowledge is called learning.

2. *The Implications of Learning or of the Acquisition of Knowledge.* – Though it is the intellect that enables us to learn, there is implied in the acquisition of knowledge, first, that the child have experience. To illustrate, before a child can know what an apple is, he must see, touch, smell, and eat one, and he must give meaning and value to the sensations or impressions derived therefrom. Hence, the condition of learning is the presence in the mind or in consciousness of experience.

The ideal way to get experience is through the expression of impulse and through reacting upon external objects. To acquire experience through the expression of impulse in action and through reaction upon the thing to be learned is termed the direct method.

In the economy of mental life, there are short cuts and abridgments of processes, and it is here that one of the most important of these occurs. After the child has given meaning and value to a number of actual experiences and gained thereby some little knowledge, he is able,

from description either oral or written, and through the use of old knowledge and the exercise of reproductive and constructive imagination, to induce a sort of mimic experience of the facts, scene, or situation described. This mimic or self-induced experience may be worked over into knowledge which answers all practical purposes.

Such experience is supplied by what is called the indirect method. This method renders available experiences other than actual, and since under present conditions of instruction it is impossible to supply the child with all the direct sense-impressions necessary to give him the knowledge needed to adjust his life to present social conditions, considerable recourse must be had in education to this indirect method. Nevertheless, the superiority, for learning, of actual over self-induced experience and of the direct over the indirect method of supplying it is questioned by no one.

Secondly, not only does learning presuppose the presence in the mind of experience, but it implies that this be given meaning. To give meaning to experience, the child must become conscious of the effects of the given experience and of the significance for him of these. To illustrate, a lump of substance is placed in the child's mouth, he feels a distinct pressure upon his tongue, he feels the substance melting, and notes an agreeable sweet sensation. The child, we say, has had the experience of tasting sugar. But what meaning has this for him? It means the sum total of the recognized and associated effects: the sense of pressure, of dissolution, the sweet taste, and the significance these have for him. Or, take the six-year-old's idea of fire, "Fire is what burns." Its meaning to him is its recognized effects and their significance, and it is in the

light of the fact that experience is given meaning, in view of the effects of the experience and the significance of these effects, that the definitions of children find their explanation.

Thirdly, the gaining of knowledge implies that experience be given value. To give value to experience, the child must become conscious of both its worth as an aid to action and as a thing to be enjoyed. For example, a boy eats a green persimmon and the value assigned to the experience depends upon the estimate put upon his discomfort and the recognition of its utility in directing future action; he eats a ripe one and the value given depends upon the worth assigned to the experience as a basis for guiding action and upon that ascribed to the enjoyment derived from it. To give experience value implies, therefore, that the child becomes conscious of its worth.

3. *Processes of Learning or of Acquiring Knowledge.* — There are four processes through which experience is given meaning and value, or of learning: the assimilative, the perceptual, the conceptual, and the systematic. Each is active within limits during a given period of life and on a given level of development. The assimilative operates in infancy, the perceptual in childhood, the conceptual in boy-girlhood, and the conceptual and systematic in youth and adult life. Of these processes, the perceptual and the conceptual are of particular interest to us.

The perceptual process of learning has two modes, the inductive and the deductive.

(*a*) The inductive perceptual process of learning. — The following are illustrative of the inductive perceptual process of learning:

Happening to be in the kitchen one day, when a boy about nine years of age, my mother said, "We are going

to have something new for luncheon — grape-fruit." So far as I remember, I had never seen or heard of it. Having the proverbial appetite, I was interested in the new food, and on observing it was impressed with the similarity between grape-fruit and an orange, with respect to form, color, and rind, and with respect to the form, structure, and arrangement of carpels. Variations between the two were noted, but upon reflection all were ignored save those of size, form, and color. On smelling it, the odor seemed like that of an orange, yet decidedly different; after repeated comparisons I concluded it was something like the odor of a sickroom. The taste at first seemed like that of a lemon, but I soon found it was different, and after recalling the taste of various things and after repeated judgments, I decided it was something like that of quinine. As both the taste and smell were disagreeable, I concluded that I did not like grape-fruit. All these sense-impressions and the significance and value given them were fused into one idea-whole, and I came to think of grape-fruit as a big, round, light yellow, sickly smelling, orange-like fruit, with a flavor like quinine, and of little worth.

A sample of valerianate of ammonia was given me, of which I was ignorant, except as I recognized a few familiar qualities. I observed its appearance and noted that it looked like particles of glass broken up into small, irregular, flat pieces. I felt of it until I got a tactual image; this image was on the whole a new one, yet I found old elements, for the feeling was something like that of a hard-smooth-cool-liquid-oily substance. I tasted it and got a new taste which was sharp and cutting, unlike anything I had ever experienced. I smelled of it and got an olfactory image of its distasteful, pungent smell; this odor was likewise

an essentially new one. Reflecting upon these impressions and associating these images, valerianate of ammonia came to mean a flat, irregular, glass-like substance, with a hard-smooth-cool-liquid-oily texture, with a sharp cutting taste, and disagreeable pungent odor, — or its recognized effects upon me. Not knowing anything of its medicinal use, its value was determined in view of my recognized discomfort, and I decided that it was worthless stuff.

A boy, for example, may know a brick when he sees it, and something of its use, but he may be ignorant of how it and similar things are made. Take him, however, to the clay bank where the clay is being dug, let him follow the clay to the pit where it is deposited and prepared for moulding, let him watch the moulding and go with the newly-made brick to the drying yard, let him follow it to where the bricks are being set, let him see the kiln fired and the newly-burned bricks, still warm, coming from the kiln, let him reflect upon the impressions gained and upon the reason for the separate parts of the process, and there will arise in his mind, as the result of his observations and thought, a concrete idea-whole of how a brick is made.

In the above illustrations, the experience given meaning and value is to be characterized as *essentially new*. For, although among the sensations gained from eating grapefruit there are old impressions obtained from oranges, the meaning and value of which are known, there are impressions never before in the mind, whose meaning and value must be determined for the first time, and it is these that make the experience an essentially new one. The same is true of the experience derived from valerianate of ammonia and from visiting the brick plant.

For a like reason, the concrete ideas acquired are to be

similarly characterized. To be sure, all the parts of the concrete idea gained of grape-fruit, of valerianate of ammonia, and of how a brick is made are not essentially new, — indeed, there are many old factors in them, — yet there are in these ideas essentially new elements.

By reason of the character of the experience given meaning and value, and by reason of the character of the ideas acquired through it, the inductive perceptual process of learning may be defined as that process of thought or of reasoning in and through which particular meaning and value is given to an *essentially new* experience, and the experience and the meaning and value given symbolized to the self by an *essentially new* concrete idea or concrete idea-whole.

As the source of our essentially new concrete ideas or idea-wholes, the inductive perceptual process of learning is distinctively constructive and creative. For, taking the experience derived from grape-fruit, from valerianate of ammonia, or from visiting the brick plant, giving the separate elements of this meaning and value, and forging these separate elements into an essentially new concrete idea or idea-whole, is as distinctively a construction, a creation, as the greatest scientific invention or literary production, and the thought movement within, though psychological and not logical, is as distinctively one of induction.

(*b*) The deductive perceptual process of learning. — The deductive perceptual process of learning is illustrated by the following:

S had never had and, so far as known, had never seen or played with other than colored round balls. One day a pygmy football was given him, without a word. At first, he took little notice of it; soon, however, he began

to play with it. Gradually his face lighted up, and he said, "Ball, ball." Upon being asked to give it back, he ran away. *S* had likewise never had and, so far as known, had never seen other than small rag dolls. Upon being given — without a word save "This is for baby" — a life-like doll, his face lighted up instantaneously, and he shouted with glee, "Dolly, dolly, baby dolly!"

A bottle was placed before a boy seven and a half years of age, the object being to have him relate what went on in his mind as he tried to find out what was in the bottle. The following is a transcript:

"Upon smelling the substance, the odor seemed familiar to him, but suggested nothing. On the second trial, it still seemed familiar, and he found himself naming over different odors, comparing with these the one in question and trying to identify it, but he failed. On the third trial hair ointment was suggested, and on comparing, he felt certain that the odor was that of hair-oil. With the rise of this sense of certainty, he could feel, as it were, the meaning and value attached thereto going over to the given substance." The material in question was the essence of bergamot used extensively in hair ointments.

From the above illustrations, it will be seen that meaning is given to experience in the deductive perceptual process of learning through recognizing the similarity between the experience in question and a past experience, and through a transfer — upon the basis of recognized similarity — of the particular meaning of the experience similar to the one in question. Likewise with the assignment of value. Life proceeds upon the principle — to be sure, acted upon at first unconsciously — that similarity of meaning is indicative of similarity of value.

Consequently, when upon the ground of likeness the concrete meaning of a past experience is transferred, its particular value is also transferred, and the experience in question is ascribed a value similar to that of a given past experience.

The experience acquired and worked up into knowledge through this process of learning is to be characterized as *new*, though there are no essentially new elements in it, no elements never before given meaning and value. The combination of elements is, however, new, and this makes the experience as a whole, though similar to a previous experience, different from any other.

The concrete ideas or idea-wholes gained through this process of learning may also be characterized as *new*. For the child's concrete idea of the life-like doll is, for example, in no sense an essentially new mental product, though it is similar to his idea of his rag doll. Still, the two ideas lie apart in his mind and are carriers of somewhat different meanings and values. A new concrete idea or idea-whole is, then, one that is similar to a concrete idea previously acquired, yet is somewhat different and is held in the mind as a separate picture-whole.

From the character of the experience given meaning and value, and from the character of the ideas acquired through it, the deductive perceptual process of learning may be defined as that process of thought or of reasoning through which particular meaning and value is given to a *new* experience and the experience and the meaning and value given symbolized to the self by a *new* concrete idea or idea-whole.

(*c*) The relation between processes of perceptual learning. — The basis of a process of deductive perceptual

learning is, as we have seen, old experience having particular meaning and value, or old concrete ideas. These old ideas are acquired as a rule through inductive perceptual learning. The inductive perceptual process of learning is therefore the prior process and conditions the wider operations of the deductive.

On the other hand, an essentially new experience, acquired and worked over into knowledge through the inductive perceptual process of learning, includes within it old elements. So far as the essentially new experience includes old elements and these are not greatly modified by the new combination, it is given meaning and value through a process of deductive perceptual learning, as this is the more ready and economical method. Inductive perceptual learning thus implies at least the implicit operations of the deductive, and though the operations of the former are not fundamentally conditioned by the latter, they are greatly facilitated thereby.

The processes of perceptual learning are therefore related and each conditions the workings of the other.

(*d*) The products and results of the perceptual process of learning. — The product, on the side of knowledge, of the perceptual process of learning is, as suggested, a concrete idea or concrete idea-whole. Through this process the child gains, on the one hand, free ideas of given impulses, of given needs, and of particular ways and means of expressing his impulses and of satisfying his wants, and, on the other, he gains through it free ideas of objects and things, and of the conditions environing his life.

The concrete ideas thus acquired are, however, not static; they undergo change and development. These are built up out of experience, and the elements thereof which may

be seized upon and worked over into knowledge are determined by practical needs. The child's needs are, however, subject to variation, and his reactions to the same object or situation therefore vary from time to time, so that there is a consequent change in his notion of a given object. His idea of a knife differs at different times, and on the whole is never like the manufacturer's; his idea of playing ball is modified from time to time, and is never quite like that of the professional ball player; his idea of a horse is always far from that of the professional breeder. Since a concrete idea is a living, developing thing, and not something that can be stamped upon the child's mind in its final form once for all, the question for the teacher is: What concrete idea-whole of a particular need, object, or situation can and should be given to the child at a given time?

The results, on the side of action, of the perceptual process of learning are, that the child is able, in the light of the essentially new concrete ideas acquired through the inductive mode, to give expression in action to his impulses in essentially new ways and to adjust himself to essentially new conditions, and is also able, upon the basis of the new concrete ideas gained through the deductive mode, to direct his activities with ease and economy in the presence of old and similar situations.

4. *The Conceptual Process of Learning.* — With the increasing complexity of life for the child and with the rising powers of the intellect, the perceptual process of learning is gradually supplanted by the conceptual.

There are two modes of conceptual learning, the inductive and the deductive.

(*a*) The inductive conceptual process of learning. — As an illustration of the inductive conceptual process of learn-

ing, a child, say, becomes acquainted with different kinds of knives — a pocket knife, a table knife, a carving knife, etc. He observes that they are of various sizes and shapes, made of different materials, and used in different ways. Hearing such different things called knives, confusion arises and the question comes: What is a knife? The recall of the concrete ideas of the knives he knows yields no answer. If actuated by sufficient motive, these concrete ideas are separated into their elements, the common and essential ones noted, and the elements found common and essential fused into a general notion; and thereafter a knife means to the child a thing of convenient form and size, having a handle and blade, and used for cutting. Value is assigned to this insight in view of the mental satisfaction it affords and in the light of its utility.

Or a child has learned through the inductive perceptual process how to add $12 and $14. This knowledge may be used as a guide in adding similar numbers, such as 12 cents and 16 cents, 17 horses and 19 horses. There will come a time, however, when the child is confronted with the question: How can I find the sum of any given numbers? The mere calling to mind of how he added other problems fails to supply the desired information, for the general elements in the concrete problems and in their solution are not apparent. These elements can be brought to view only through separating given problems and the operations in their solution into their elements, through fixing upon the common and essential ones, and through bringing these elements into a general idea.

Or a child has gained at school a concrete idea-whole of Niagara Falls. Through railroad advertisements or conversation at home, this question arises: Why is Niagara so

famous? The mere recall of his concrete idea of Niagara will fail to supply the answer. To attain this, he must reflect upon the given parts of Niagara, consider what it is with and what it would be without this and that one, pass judgment upon what parts are distinctive, and see that Niagara is famous because of these particular features.

The experience given meaning and value through the inductive conceptual process of learning is to be characterized as *essentially new*. This does not mean that the same sense-impressions have never before been in the mind, or that their concrete meaning and value have never before been appreciated. For the child in the above illustrations had had the experience and was in possession of concrete ideas of knives, of particular problems and their solution, had a concrete idea-whole of Niagara, long before the inception of the given process of inductive conceptual thought. Nor does it imply that there are no elements in the experience or experiences in question, the general meaning and value of which are known. To characterize an experience or experiences as essentially new merely means that there are elements included, the general meaning and value of which must be determined for the first time and determined more or less independently of any previously acquired general ideas.

The general ideas gained through the inductive conceptual process of learning are also to be characterized as *essentially new*. The child, for example, in the above illustrations came for the first time to appreciate what a knife is, how to solve any problem in addition, what features of Niagara are distinctive, and nowhere in his fund of knowledge has he general ideas essentially similar. All parts of an essentially new general idea are, of course, not

new. Such ideas include old elements of general meaning and value, yet in an essentially new general idea there are elements of general meaning and value appreciated for the first time, which make the general idea gained essentially different from any previously acquired.

The essentially new general ideas obtained through the inductive conceptual process of learning fall into two classes — class concepts and individual concepts. A class concept is an idea of the common and essential qualities or characteristics belonging to a class — for example, the abstract idea, horse, river, water-fall, or the idea of a principle, rule, or definition, such as the principle of the right lever, the rule for the multiplication of a fraction by a fraction, or the definition of a noun. Many of the larger truths of arithmetic, grammar, elementary school science, as well as certain of those of history, geography, and literature, are notions of this kind and come to the child as essentialiy new class concepts. On the other hand, an individual concept is a concrete idea of a given particular suffused with the appreciation that certain qualities are distinctive or characteristic — for example, a concrete idea and appreciation of the distinctive qualities or characteristics of Niagara Falls, of Chicago, of the winter at Valley Forge, of the Missouri Compromise, The Village Blacksmith, or The Angelus. The larger and more vital truths of geography, history, literature, and art are of this type.

From this point of view, the inductive conceptual process of learning may be defined as that process of thought or of reasoning in and through which general meaning and value are given to an *essentially new* experience or group of experiences, and the meaning and value given symbolized to the self by an individual or *essentially new* class concept.

(*b*) The deductive conceptual process of learning. — The following are examples of the deductive conceptual process of learning:

A child is confronted with the question: What is this? He may form a relatively clear concrete idea of the object before him, but its meaning and value as thus symbolized are in nowise satisfactory; he is in doubt where to put it, how to classify it. He notes its long, handle-like part, the sharp and hook-like blade. These features suggest the general idea of a knife, and he decides it is a knife. He is still perplexed, however, as he does not know what kind of a knife it is. With the characteristics of the given object in mind, he begins to search among his general ideas of different kinds of knives. These are recalled one after another and dismissed. Tardily there comes forth his concept of a pruning knife, formed some five or six years before, but never in the meantime brought into service. With the recall of this concept, there is sensed a feeling of familiarity with respect to the object in question. Reflection confirms this feeling and the child decides that the object before him is a pruning knife. All the general meaning and value acquired by such knives goes over to the given one, and he feels that he knows the object and becomes conscious of a given attitude toward it.

Or, the question before the prospective settler may be: Is eastern North Dakota adapted to general farming? Three conditions are known to him as essential — good soil, long, warm summers, and an abundance of rain. With his conception of good soil in mind, he examines the soil in question and pronounces it excellent; he studies the government and state reports with reference to temperature, and finds the heat conditions good; he turns to the same reports

with regard to moisture, and noting that it is from ten to twenty inches per annum, decides that the rainfall is sufficient. Drawing together the insights thus gained, he concludes that eastern North Dakota is adapted to general agriculture, and places his personal estimate upon this section.

Or, a boy who has gained in formal grammar a general idea of the noun and its uses, also a conception of the clause, comes upon a number of illustrations of the substantive clause and the question arises: What is a substantive clause and what are its uses? If he notes carefully each of the given clauses and the particular way in which each is employed, then recalls his idea of the noun and its uses, and finally compares the given clauses and the way they are employed with what he knows of the noun, he will come to the conclusion that the substantive clause is one which takes the place of and is used in the sentence as a noun.

In the first two illustrations, it will be observed that the general meaning and value given the particular in question was assigned in the light of a previously acquired general idea or ideas. It will also be observed that, in the third illustration, the general idea gained was acquired through the aid of conceptions previously obtained. It is this giving of general meaning and value to a particular experience through relating it to or interpreting it in the light of a class concept, or the giving of general meaning and value to a group of experiences through the aid of previously acquired general ideas, that is distinctive of the deductive conceptual process of learning.

The experience given general meaning and value through this process of learning may be designated as *new*. There are in the experiences thus worked over into knowledge no

new elements in the sense that the general meaning and value of these have never before been appreciated, but the elements are combined in a new way and it is this that makes the experience a new one. The prospective settler in examining the soil and climatic conditions of eastern North Dakota discovers no new elements, but he does find old ones under new conditions. Likewise with the boy trying to determine the meaning and function of the substantive clause, his knowledge of the noun and its uses is found in a new form.

The general ideas acquired may be similarly characterized. In case the meaning and value are ascribed to a particular experience, a new concept is gained, but not an essentially new one; general meaning and value have merely been given to a particular — to eastern North Dakota, for example; or a particular pruning knife has been suffused with general significance and put in its class. The same is true when meaning and value are given to a group of particulars, such as a number of type substantive clauses. To be sure, in the illustration given the child gains a general idea of the substantive clause. Yet in this conception there are no essentially new elements of general meaning and value — all are practically included in his idea of a noun. These elements are, however, found in a new dress and in a somewhat different combination, and it is this that makes the concept a new one. Notwithstanding a new concept contains within it no essentially new general elements of significance, it lies apart in the mind, and though the child may appreciate its similarity and relation to other concepts, it is never confused with them.

The new general ideas acquired in and through the deductive conceptual process of learning are of two kinds —

class concepts, and particular concepts. The class concepts acquired through this mode of learning are to be defined in the same way as those gained through the corresponding inductive process. The particular concept, however, differs from the individual concept, as it is a concrete idea suffused with certain general elements of meaning and value which connect the particular in question with a given principle or class. The boy, for example, not only has, as the result of his thought, a concrete idea of the pruning knife, but he also recognizes therein certain elements of general meaning and value belonging to all pruning knives. The prospective settler, as the result of his investigation, not only has a concrete idea of eastern North Dakota, but also sees therein a particular expression of the general conditions of agriculture. A considerable portion of the larger truths of the different school subjects are particular or new class concepts and come to the child in this form.

From the character of the experience given meaning and value, and from the character of the ideas acquired through it, the deductive conceptual process of learning may be defined as that process of thought or of reasoning in and through which general meaning and value are given to a *new* experience or to a group of *new* experiences, and the general meaning and value given symbolized to the self by a particular or *new* class concept.

(*c*) Relation between processes of conceptual learning. — New experience is given general meaning and value, as we have seen, in the light of previously acquired general ideas. The general ideas thus employed are as a rule gained through the inductive conceptual process of learning. This suggests the fact that the deductive conceptual

process is conditioned in its workings by the inductive, as the latter supplies the basis of the operations of the former.

An essentially new experience, given general meaning and value through the inductive conceptual process of learning, contains within it, as we have seen, old elements. In so far as this is true, such an experience is given general significance through the corresponding deductive process, as this is the more ready and economical method. There are involved, therefore, in the inductive conceptual process of learning — to say the least — the implicit operations of the deductive, and though the inductive process is not essentially dependent upon the deductive, it is greatly facilitated thereby.

The processes of conceptual learning are therefore to be viewed as related, and each is to be regarded as conditioning the operations of the others.

(*d*) The products and results of the conceptual process of learning. — On the side of knowledge, the child gains, through the conceptual process of learning, an idea of himself and of others as having permanent tendencies, interests, and needs; he gains through it general ideas of industry and of industrial processes, general ideas of the family, of the state, of his rights and duties, also general ideas of classes of objects, of particular things and situations, and of the laws and principles controlling the physical world. In short, he gains, through this process of learning, general ideas of himself, of the social world, and of nature.

The concepts acquired are, however, not static or changeless, embodying once for all the elements of the general significance of a given experience or of a group. They are gradual acquisitions, undergoing development and decay according as there is change in the child's interests

and purposes. For the general idea or concept, as such, is not primarily dependent upon experience, but upon those elements of experience selected as of importance under the particular conditions of life and assigned general meaning and value. A given general idea or concept may therefore be one thing today and another tomorrow. Nor is the concept expressive of the general significance of an experience or of a group necessarily the same for the child as for the adult; indeed, it may be and doubtless is quite different, for what seems of importance to the one is not always so for the other. The question for the teacher, therefore, is this: What is the content of the general ideas of the child at each stage of his development and what content can and should be given them?

On the side of action, the conceptual process of learning results not only in enabling the child — upon the basis of the general ideas of the purposes and ends of life, and of the conceptions of the natural world acquired — to control and direct his actions in essentially new and uniform ways, but also results in enabling him — in the light of the conceptions attained more particularly through the deductive mode — to adjust himself with ease and security to particular situations and conditions. In short, the conceptual process of learning enables the child to direct his actions in the light of laws, principles, and ideals.

5. *The Processes of Learning and Psychical Development.* — Such, in general, are the perceptual and the conceptual processes in and through which the child acquires knowledge. These processes are an essential part of the larger one in and through which the child develops psychically. For it is the capacity to learn and the acquisition and use of knowledge that condition psychical development.

§ 5. The Process: The Acquisition and Use of Knowledge and Will Development

Further light will be thrown upon the process in and through which the child develops psychically, if the relation between the acquisition and use of knowledge and the development of the will is examined.

Will development implies the giving of content to and the control and direction of impulse.

1. *The Giving of Content to Impulse.* — The giving of content to impulse presupposes, first, the presence in the mind of the child of the experience to be derived from the impellings of the impulse and from its expression in action. To illustrate, the condition of giving content to the play instinct is that the child feel the instinctive inclination to play and have the experiences resulting from playing different games. In case of the acquisitive instinct, the child must have the sensation of being impelled to collect and the sense-impressions arising from making and possessing given collections. If it is the constructive instinct, the child must feel its impellings, and have the experiences derived from reacting upon given things, from the activities involved in the construction of given objects, and from the use and enjoyment of the things made.

Second, in giving content to impulse there is implied, on the one hand, that meaning be given the experiences derived from its impellings and from its expression in action, and that these experiences and their meaning be associated with the impulse. For example, by ascribing meaning to the experiences derived from the instinct to play and its gratification, one comes to know its impellings, to know the actions involved and the pleasure to be had

from a particular expression in playing a given game; and it is the reference of this knowledge to the play instinct that gives it content. Similarly, through ascribing meaning to the experiences derived from the constructive instinct, one comes to know its impellings, learns what activities are involved in a particular expression, learns how to construct and use given things, and what satisfaction is to be had from them; in short, the constructive instinct is given content to the extent to which it is bound up with such knowledge. Likewise, by giving meaning to the experiences arising from the acquisitive instinct and its expression, knowledge is gained of the instinct, of what can be acquired, of the activities involved, and of the pleasure to be derived from a particular possession; and to associate the knowledge thus acquired with the constructive instinct is to give it content; so with all impulses.

Third, there is implied, on the other hand, that value be ascribed to the experiences arising from the impellings of the impulse and from its expression in action, and that the value assigned be associated with the impulse. To illustrate, by giving value to the experiences had from the acquisitive instinct and its satisfaction, one gains knowledge of the worth of these experiences; and to the extent to which this instinct is bound up with the ideas of the worth of the experiences derived from it, to that extent it has content. In like manner, the constructive instinct acquires content through relating to it the ideas of worth gained from giving value to the experience derived from the instinct and its expression. The value assigned an impulse thus depends upon the worth ascribed to the experiences arising from the impulse and its issuance in action.

Apart from its expression, the giving of content to impulse

consists, then, in assigning meaning and value to the experiences arising from its issuance in action and in referring the meaning and value ascribed to the impulse. To give meaning and value to experience is, as we have seen, to acquire knowledge. An impulse is therefore given content through gaining knowledge of it, of the actions and of the experiences to which it leads, and of the worth of the experience derived from its impellings and issuance in action, and is consequently conditioned by the processes in and through which knowledge is acquired. In other words, it is through the learning processes that impulse is given content.

2. *The Control and Direction of Impulse.* — To control an impulse is to be able to inhibit or confirm its expression, and to direct an impulse is to guide its issuance in action.

An impulse is confirmed or inhibited through the child identifying or not identifying himself with the impulse and thereby reënforcing or not reënforcing it with the other forces of his nature. To illustrate, in early life there is no conscious control of impulse, the strongest one of the moment inhibits all others and issues in action. Take for example hunger. The infant eats providing there is opportunity whenever it is hungry. With the giving of content to hunger this is not so. By virtue of its content, there has been absorbed into the impulse a variety of ideas of its meaning and value. Thereafter, upon the entrance of the impulse into consciousness, these ideas are revived and especially ideas of its value, and they tend to check its immediate expression. If, in view of the revived ideas of value, the things to eat and the surroundings at hand seem appropriate to the satisfaction of hunger in a way to be of worth, he identifies himself with the thought of satisfying

his hunger with the things and under the surroundings in question. The idea of gratifying his hunger with the means available symbolizes to the child the value of a given expression of the hunger instinct, and is dynamic, and when the idea is reënforced by a sense of harmony with the child's habits, tastes, and interests, it becomes doubly so. The thought of satisfying hunger in the given way thus reënforced reacts upon the impulse, and the impulse being thus augmented in its impellings, passes over into action. If, however, the things to eat and the surroundings at hand do not seem suited to the satisfaction of hunger in a desirable manner, the child does not identify himself with the idea of gratifying it in the given way, and the impulse is inhibited.

To illustrate further: Though in later childhood various impulses of different natural strength may at the same time excite to action — for example, that of self-preservation and the moral-religious impulse — the expression of these under the given conditions may have different values. That of the weakest naturally may have the greatest worth, as the idea of the self implied in its issuance in action may harmonize best with the child's ideals, and consequently calls forth the most reënforcing tendencies. As a result, the child identifies himself with the naturally weaker impulse, the forces of his life as then organized drain off into it, and being thus augmented, it passes over into action and inhibits all other impulses.

It is well to remark, in this connection, that the medium of confirmation or inhibition is always an idea — an idea symbolizing the value of the probable experience to be derived from the expression of an impulse in a given way. Such ideas are centers of control.

On the other hand, the basis of the direction of impulse is knowledge of what is involved in its issuance in action. Through the giving of content to an impulse, say the artistic, the child comes to know, as we have seen, the activities involved in different expressions, to know the means to be utilized, and to know what is produced. Later, when the child desires to give a particular expression to this impulse, or to create a given thing of art, he is able, through the control of his actions on the basis of knowledge previously acquired, so to direct the impulse in action that the desired thing is produced. Similarly with all impulses; they are directed in their expression on the basis of knowledge of the activities and of the means involved therein.

Since impulse is controlled in view of ideas of the value of the experience to be derived, and is directed in its issuance in action, in view of knowledge of the activities and means involved in a given expression, the control and direction of impulse presuppose a certain content. An impulse acquires content, as we have seen, through meaning and value being ascribed to the experience arising from its issuance in action and through the reference of the meaning and the value given to the impulse. Meaning and value are ascribed to experience, as we have seen, in and through the learning processes. The control and direction of impulse implies, therefore, no other processes than those involved in the child learning or acquiring knowledge.

3. *The Process of Will Development.* — Will development not only implies the control and direction of impulse, but also consists in exercising progressively better control and direction.

The control and direction of impulse rests, as we have seen, upon its content; the giving of content rests, in turn,

upon the learning processes. All that is implied in will development, other than the expression of impulse and the use of knowledge in better and better control and direction, is therefore supplied by the learning processes.

The process in and through which the will develops may consequently be characterized as one in which its elements — the primal impulses and related instincts — are given expression in action, the resulting experiences ascribed meaning and value, or worked over into knowledge through the learning processes, and the knowledge thus acquired used in exercising progressively better control and direction over the future expression of its elements. To illustrate, a boy moved by the constructive instinct plays with materials and tools, but constructs nothing of worth to himself or to others. From these experiences, however, he learns about different woods and how they can be used, about different tools and how to handle them. With the return of the impulse, instead of following the inclination merely to play, he consciously uses the knowledge gained of woods and tools in so directing his activities as to make a towel rack. Or, the youth stirred by sympathy and the religious impulse gives indiscriminately of his time and money. From experience he learns that, in cases, instead of doing the recipient good, he really does him harm. He uses this knowledge in the future to exercise better control over his charitable impulses and in directing their expression to the advantage of the recipient.

4. *The Law of Will Development.* — In view of the nature of the process through which the will develops, the development of a particular will is conditioned by the expression given it, by the character of the resulting experience, by the meaning and value ascribed this, and by the use made

of the knowledge thus gained in controlling and directing the future expression of its elements.

5. *Stages of Will Development.* — The stages in the development of the will were suggested in our study of the periods in child development; these are the stages of the assimilative, the perceptual, the conceptual, and the systematic will. In view of the relation existing between the processes of learning and of will development, the grounds of this division are not far to seek. Each separate process of learning enables the child to gain a distinct type of knowledge and to give a distinct type of content to his impulses; their control and direction upon the basis of this type of knowledge gives rise to a distinct stage in the development of the will. We have, in consequence, corresponding to the assimilative process of learning and the products thereof, the assimilative stage in will development, corresponding to the perceptual process, the perceptual, and so on to the highest stage of will development — the systematic. The problem of the teacher, from this point of view, is to lead the child from the lowest process of learning — the assimilative — to the highest — the systematic — and thereby provide for leading him from the lowest to the highest stage of will development, that is, from the stage of the assimilative to that of the systematic will.

6. *Will Development and Character Development.* — Character is life crystallized in well-defined habits, in fixed lines of conduct. What one's habits are, what one's conduct is depends, however, upon the control and direction he chooses to exercise over his impulses or over his will. Character is therefore conditioned by the expression and direction given to impulse, or is conditioned by the development

given the will. Will development is consequently character development, and to form the will is to mould character.

§ 6. The Process: The Acquisition of Knowledge and the Development of the Intellect

Still further light will be thrown upon the process in and through which the child develops psychically, if the relation of the acquisition of knowledge and the development of the intellect is considered. The intellect develops on the side of form or of cognitive functions, that is, with respect to the power of attention, memory, imagination, reasoning, and on the side of content or knowledge.

1. *The Development of Mental Content or Knowledge.* — Knowledge is, as we have seen, experience that has been given meaning and value, and the ascribed meaning and value symbolized to the self by concrete or general ideas. It develops in two directions, — in breadth, and in depth and organization, — that is, it develops with respect to the number of things about which we have knowledge, and it develops with respect to the depth of our insight into them and in the way in which these insights are related.

Knowledge develops with respect to breadth through the child giving meaning and value to a wider and wider range of experience. To illustrate, the child's knowledge is growing in breadth when he learns of what is in the home, then of what is in the neighborhood, then of what is in the locality or community, and so on out into the larger world.

The child learns, as was suggested, through four separate processes. Each supplies him with a distinct type of insight and a particular basis of organizing his knowledge. To confine our illustrations to the processes studied, through the perceptual, the child acquires concrete ideas or concrete

idea-wholes. He may gain a concrete idea of an apple, of a peach, or of an orange, and each of these ideas may serve as the basis for classifying and relating a goodly number of concrete ideas of different apples, peaches, or oranges, but forms no basis for bringing together his knowledge of several kinds of fruits.

The insight afforded the child through the conceptual process of learning is of a different type. Through this process, he gains insight into the common and essential elements in the meaning and value of a class, or into the distinctive and characteristic elements in the meaning and value of a particular. The child's knowledge is thus deepened as he gains ideas of general meaning and value. Furthermore, these ideas of general meaning and value serve as the basis for a higher organization of his knowledge. The child is able, for example, upon the basis of his conception of fruit to associate and relate all that he may have learned about particular apples, peaches, or oranges; he is able to see these different kinds of fruit in relation to one central, organizing idea. Knowledge develops with respect to depth and organization, therefore, according as experience is given meaning and value through higher and higher processes of learning.

The process in and through which the intellect develops on the side of content may then be characterized as one in which experience of a wider and wider range is given meaning and value and this given meaning and value through higher and higher processes of learning.

2. *The Development of the Cognitive Functions.* — "The simple fact is," writes Dewey,[1] "there is no isolated faculty of observation, or memory, or reasoning any more than

[1] Dewey, *Ethical Principles Underlying Education*, p. 13.

there is an original faculty of blacksmithing, carpentering, or steam engineering. These faculties (that is, blacksmithing, etc.) simply mean that particular impulses and habits have been coördinated and formed to accomplish certain definite kinds of work. Precisely the same thing holds of the so-called mental faculties. They are not powers in themselves, but are such only with reference to the ends to which they are put, the services which they have to perform." In short, cognitive functions are not "mental powers or faculties" existing from infancy, but particular uses of the intellect developed with reference to the needs of life.

In life under given conditions, there is need of knowledge. The acquisition of this necessitates the exercise of the intellect in the learning processes in given ways, and it is the continued use of the intellect in given ways that causes the rise and development of different cognitive functions. To illustrate, attention develops through exercise in observation; the scientist acquires a given type of attention through observation of a given kind; the sailor by attending to a different kind of thing acquires another type. The imagination develops by use in representing things real and ideal; the artist develops one type through picturing things of a given character, the mathematician another.

The process in and through which the intellect develops on the side of cognitive functions may therefore be characterized as one in which it is employed in different ways in the learning processes in the acquisition of the knowledge needed in the living of life to the full under given conditions.

3. *Relation between Development of Content and of Cognitive Functions.* — The exercise of the intellect in giving meaning and value to experience results, as we have seen, in knowl-

edge and in its development, and the use of the intellect therein causes the rise and development of cognitive functions. Consequently, to think of the development of mental content apart from that of cognitive functions is to lose sight of the mental activity involved in the rise and development of knowledge, and to think of the development of cognitive functions without regard to a corresponding development of content is to ignore the product of mental action. For there is no knowledge apart from the activity of the mental functions, and *vice versa;* each without the other is meaningless. The development of the one is therefore implied in that of the other.

The significance of this relationship only becomes apparent, however, upon further examination. The activity of the cognitive functions in giving meaning and value to a particular type of experience yields a given type of knowledge — knowledge of arithmetic, history, geography, or drawing. But can we say, on the other hand, that the acquisition of a given kind of knowledge — like arithmetic, history, or geography — results in the rise and development of given mental functions?

If we accept the theory that all activity of the intellect is conditioned by the brain, that development of the intellect on the physiological side is but the fixing of brain-cells to react in a given way, and that brain-cells are subject to the law of habit, — if we accept these theories, we are forced to conclude that the giving of meaning and value to a particular type of experience, or the acquisition of a given kind of knowledge — like arithmetic, or history — results, on the side of the brain, in the fixing of certain cells to react in a particular way, or results in the rise and development of given cognitive functions.

The import of the relationship between the development of the form and content of the intellect is, then, that the development of the one is reciprocally conditioned and determined by that of the other. In consequence, the development of given cognitive functions implies the giving of meaning and value to particular types of experience, and the acquisition of particular kinds of knowledge fosters the rise and development of given cognitive functions. The cognitive functions developed will therefore vary with the character of the experience worked over into knowledge.

4. *Definition of Cognitive Function.* — This reciprocal and parallel development of the form and content of the intellect makes necessary a correcting and broadening of the common idea of a mental faculty or cognitive function. Attention, memory, and imagination are, to be sure, ways in which the intellect works. We do not, however, have attention, memory, or imagination as general mental powers: we have attentions, memories, imaginations, corresponding to given types of mental content. That is, there is no general function of attention through which all things are observed, but innumerable functions of attention each developed through attending to a particular kind of experience. We do not have a general power of memory through which all things are remembered, but a variety of these, each developed with reference to remembering given things. Nor do we have a single power of imagination which serves alike to represent every kind of experience, but many, each developed in connection with the representation of experience of a given character. Attention, memory, imagination, etc., as functions of the intellect are, therefore, merely class terms employed to designate a variety of similar functions, developed in

connection with giving meaning and value to particular types of experience.

5. *Use and Development of Cognitive Function Particular, not General.* — This view of a cognitive function gives rise to a fundamental question. Can a cognitive function developed through the acquisition of a given kind of knowledge be used in gaining knowledge of a radically different character? To be definite, can mental power gained in arithmetic be used in learning history? The answer of modern psychology is something like this:

In so far as the type of knowledge to be acquired is similar to that in connection with which the given function was developed, to that extent it is of use. This is true because of the similarity of mental work involved in the acquisition of the two kinds of knowledge. In so far, however, as the knowledge to be gained is different from that in connection with which the function was developed, to that extent it is useless. For as Hinsdale[1] puts it, "No matter what kind of mental activities we consider, they conform to the causes that excite them. Like the dyer's hand, the mental faculties are subdued to what they work in."

The educational implication is that it is impossible to develop general cognitive functions or mental powers — useful under all conditions — through the teaching of two or three subjects, for cognitive functions develop through use in given ways and with reference to particular situations. To foster the rise and development of the cognitive functions needed in the adjustment of life to present social conditions, the curriculum must, therefore, contain a variety of studies and activities.

6. *The Law of Mental Development.* — Since the de-

[1] Hinsdale, *Educational Review*, viii, p. 136.

velopment of the intellect both on the side of content and of cognitive functions depends upon the range and kinds of experience given meaning and value through the different processes of learning, the development of the intellect with respect both to form and content is conditioned by the range and character of the experience worked over into knowledge through its activity on the different levels of learning. Or, as stated by Schurman,[1] "The mind grows by what it feeds on."

7. *Stages in the Development of the Intellect.* — There are four stages in the development of the intellect. These were tacitly recognized in our consideration of the intellect as the medium of controlling and directing impulse, also in our discussion of the periods of psychical development, and likewise in our study of the processes of learning and of the stages in will development. The stages in the development of the intellect may be designated as the assimilative, the perceptual, the conceptual, and the systematic. Though distinct, these stages are reciprocally related; and although all the cognitive functions are to be found implicitly or explicitly in each, the nature and the activity of respective ones vary with the period, and there is a corresponding variation in the learning process and in the view of the self and of the world afforded. Of these stages, the assimilative is the lowest and the systematic the highest, and it is the work of the teacher, in the development of the intellect, to advance the child from the one to the other.

8. *Intellectual Development and Character.* — Character, as we have seen, is determined by the fixed ways in which the individual chooses to act. The particular way in which

[1] Schurman, *School Review*, ii, p. 93.

he chooses to act depends, at least in part, upon his knowledge of his nature, needs, and ends. Relatively complete knowledge of one's nature, needs, and ends implies a high degree of intelligence. Character development presupposes, therefore, intellectual development, and though the latter does not necessarily lead to the former, it is the basis and the condition of the former. A completely rounded character implies, then, a completely developed intellect.

§ 7. The Process: Will and Intellectual Development

Though the will and the intellect are separate aspects of psychical life and have different functions therein, from the relation of their development to the acquisition and use of knowledge, it is apparent that they do not develop one apart from the other. For the will develops, on the one hand, as the experiences arising from the expression of its elements are given meaning and value, and the knowledge thus acquired utilized in better and better control and direction of their future expression, whereas the intellect develops, on the other hand, through working over into knowledge the experiences resultant upon the issuance of the will in action and through giving meaning and value to experience upon higher and higher levels of learning. Will development implies, therefore, that the intellect is being developed with respect to both form and content, while intellectual development implies that the will is being expressed and formed. To be sure, the child does not develop equally and in all directions at the same time. Still, the development of the will involves normally a corresponding intellectual development, and *vice versa*, for the will can not be wrenched out of all relation to the

intellect and be formed independently of it, nor can the intellect be isolated from the will and be properly cultured. Consequently, the development of the will and of the intellect are to be viewed as the two aspects of a single or unitary development, and to be regarded as reciprocally related and conditioned therein.

§ 8. Unity in Process of Psychical Development

The experience, the working of this over into knowledge, and the use of this knowledge, resulting in will development, is not one kind of experience and the way it is given significance one process of learning; nor is the experience and the giving of meaning and value to it, resulting in intellectual development, another kind of experience and a different process of learning. The experience in both cases is the same and this is given meaning and value through the same processes. Consequently, what is will development, from one point of view, is, from another, intellectual development, and the process involved therein — whether viewed from the side of the will or of the intellect - is the same. The development of the will and of the intellect are therefore not only reciprocally related and conditioned, but their development occurs in and through one and the same process.

§ 9. The Process of Psychical Development

The process in and through which the child develops psychically may therefore be characterized as one in which the will in its elements is given expression, the resulting experience worked over through the medium of the intellect into knowledge, and this knowledge used in the better and better control and direction of the future expression of the will.

§ 10. Educational Inferences

To attain the end for which our study of how the child develops psychically was undertaken, it remains to bring the insights gained into relation to the work of education.

1. *Psychical Development: Will and Intellectual Development.* — Since there are two factors involved, education, if it would foster the psychical development of the child as a whole, must seek to develop both the will and the intellect.

2. *Will and Intellectual Development Conditioned by Periods of Psychical Life.* — Since the psychical development of the child falls into distinct stages, — each having its particular will and intellectual characteristics, — and the development of each lower stage conditions that in each higher, it is the work of education to give to the will and to the intellect in each period the development appropriate to the period, appropriate to secure a normal development in the succeeding period, and appropriate to secure the will and intellectual development desired.

3. *The Condition of Will Development.* — Since the development of the will is conditioned by the expression given its elements, by the character of the resulting experience, by the meaning and value assigned this, and by the way the knowledge thus attained is used in controlling and directing the future expression of the will, education must seek to give the will that expression, to supply the conditions of acquiring that resultant experience, of giving that meaning and value to this, and of making such use of the derived knowledge as to secure the desired will development.

4. *The Condition of Intellectual Development.* — Since the development of the intellect is conditioned both on the side of form and content by the character of the experience

given meaning and value, education must seek to supply such experience and to secure the giving of such meaning and value to this experience as is implied in the desired intellectual development.

5. *Psychical Development Unitary Process.* — Since the development of the will and of the intellect are reciprocally related and conditioned, and since they develop in and through a unitary process, education should not seek to develop the one apart from the other, nor the will through one process and the intellect through another, but must seek to develop each in relation to the other, and in and through the same process.

6. *The Acquisition of Knowledge and Psychical Development.* — Since the development of both the will and the intellect is conditioned by the acquisition and use of knowledge, education — if it would foster psychical development — must help the child to acquire experience, lead him to work this over into knowledge, and guide him in the use of the knowledge acquired.

§ 11. Educational Principles

If these inferences are brought together and restated, we have the following principles applicable to fostering and determining the psychical development of the child:

1. Education must seek, in each period of child life, to give to the will that expression, control, and direction, and to the intellect that form and content appropriate to the development of the distinctive will and intellectual characteristics of the period, appropriate to secure a normal will and intellectual development in the succeeding one, and appropriate to secure the will and intellectual development desired.

2. Education must seek to lead the child, in each period of life, to acquire such experience, to direct him in working this over into such knowledge, and to guide him in making such use of this as will give to the will and to the intellect a development appropriate to the period, appropriate to secure a normal will and intellectual development in the succeeding one, and appropriate to secure the will and intellectual development desired.

Readings

Bagley, *Educative Process*, pp. 184–202.
Horne, *Philosophy of Education*, pp. 209–220.
Bryan, *Pedagogical Seminary, VII*, pp. 360–394.
Halleck, *Psychology and Psychic Culture*, pp. 66–68, 80–84, 180–200.
Sully, *Outlines of Psychology*, pp. 130–132, 259–276, 290–292, 299–300, 303–314, 447–474.
Angell, *Psychology*, pp. 122–132, 223–246, 311–313, 340–381.
Judd, *Psychology*, pp. 285–295, 315–336.
Dewey, *Psychology*, pp. 347–424.
How We Think, pp. 68–156.
King, *Psychology of Child Development*, pp. 110–115.
MacCunn, *Making of Character*, pp. 212–222.
O'Shea, *Education as Adjustment*, pp. 233–238, 246–283.
Thorndike, *Educational Psychology*, vol. i, pp. 170–194, 270–312.
Henderson, *Principles of Education*, pp. 209–235.
Colvin, *The Learning Process*, pp. 211–218.

CHAPTER V

THE LEARNING PROCESSES

§ 1. The Problem

From the relation of knowledge to the psychical development of the child, it is necessary, if we would understand how to direct him in the acquisition and use of the knowledge needed to foster and control his development, to examine the movements and characteristics of thought within each of the learning processes. Two of these processes are of special interest to elementary education — the perceptual and the conceptual, with their respective inductive and deductive modes.

§ 2. The Inductive Perceptual Process of Learning

In our foregoing study of the general characteristics of the learning processes, the inductive perceptual process of learning was defined as that process of thought or of reasoning in and through which particular meaning and value are given to an *essentially new* experience, and the meaning and value given symbolized to the self by an *essentially new* concrete idea or concrete idea-whole.

1. *The Rise of Need and of Motive.* — Thought is for the sake of action and we act to give expression to impulse or to satisfy a need. Where there is no difficulty in the way of acting, there is no thought. The necessity of thought arises when there is such an obstacle, and the purpose of

the given process of learning is to overcome the difficulty and to be able so to act as to satisfy a given need. Without a need to satisfy, and without an appreciation of a difficulty standing in the way, there is no motive for mental work and, as a matter of fact, none is done either by the child or by the adult.

A process of inductive perceptual learning has its origin in a need, to satisfy which requires the acquisition and the giving of meaning and value to an essentially new experience, and the use of the essentially new concrete idea gained in overcoming the difficulty standing in the way of action. The rise in consciousness of a need which the child feels constrained to satisfy, and the appreciation of a difficulty standing in the way, which can be overcome only through the acquisition and use of an essentially new concrete idea, characterize the first step in a process of inductive perceptual learning. For it is the desire to satisfy such a need and the necessity of overcoming such a difficulty that supply the motive and give point to the resulting process of inductive perceptual thought.

2. *The Acquisition of Data.* — With a difficulty to overcome in order to satisfy a given need, the child casts about for ways of doing it. If his desire can be gratified through making a bow and arrow, he seeks ways and means of making one. If his need can be satisfied through the solution of a problem, — such as finding out how many cents he has, — or through answering a question with reference to a strange, little animal, — a bat, — or through acquiring information with regard to how Robinson Crusoe built his house, he searches for materials, facts, and data which will supply the desired solution, answer, or information. His mind is, however, not in the least disturbed by how bows and arrows

in general are made, by how to add any given numbers, or by what the essential characteristics of the strange little animal are; he is interested alone in the given construction, in the solution of the given problem, or in the attractive facts in connection with the building of Robinson's house. To acquire the needed data with reference to the difficulty in hand is a distinct piece of mental work, and its acquisition marks the second step in a process of inductive perceptual learning.

3. *The Elaboration of Data.* — The acquisition of materials with respect to a particular construction, problem, or event should not be confused with the giving of meaning and value to the data collected. To do this, the facts, the sense-impressions, or the data gathered must be worked over to a greater or less extent.

To illustrate, a child comes for the first time in contact with a bat and is moved by curiosity to know what it is. He will observe, in a general way, its head, body, wings, and certain of its actions. But the idea or picture-whole derived therefrom is as yet indistinct and the animal in question means little to him. For this reason he turns back and observes with care the more striking features of its head, eyes, mouth, body, and actions. With the more definite images of its bodily characteristics in mind, there is suggested a mouse, and the suggested similarity leads to comparison. Comparison reveals likenesses and differences and tends to make those features under consideration stand out, and because of recognized similarity more or less of particular meaning and value is transferred to them. Again, other bodily characteristics suggest the idea of a bird, comparison tends to impress these features upon the child's mind, and by reason of recognized similarity they

take on concrete meaning and value. However much significance for the child the strange little animal may thus acquire, there remain features the meaning of which is not to be revealed through comparison; this can be given only through creative thought and inductive perceptual judgment. These latter processes become operative in answering such questions as: Why does it have such big teeth, such queer eyes, such funny shaped wings, such a queer body covering? In some such way the child comes to have distinct images of the more important and characteristic aspects of the bat and somewhat of an appreciation of the significance of these parts as separate wholes.

In giving meaning and value to the materials collected, there is implied an analysis of the different sense-impressions obtained from an object, or of the different elements of a problem, or of the different factors entering into making a bow and arrow. This is done by centering attention upon the elements of experience appealing to the child as the more important in the given connection. There is also implied a comparison of the means at hand and of the methods of construction suggested with what is needed, or a comparison of the given sense-qualities with those previously observed, or of the acquired facts with the same or similar ones previously comprehended. This comparison of the new with the old is not for the sake of finding elements of general meaning and value, but rather, in so far as this can be done upon the basis of recognized similarity to past experience, to make the separate means, qualities, or facts and their particular significance stand out clearly and distinctly. In an essentially new experience there are essentially new elements, — elements in a construction, sense-qualities of an object, facts of an event or story, — the

meaning and value of which must be determined from the ground up and for the first time. The doing of this implies creative thought and inductive perceptual judgment.

It is this making clear, through analysis, comparison, creative thought, and perceptual judgment, the separate parts of a construction, the ways of constructing each part, and the reasons; or the making clear the particular sense-qualities of an object and their particular meaning and value; or the making clear the different elements of a problem and their implications, or the separate facts of a story and their particular significance, that is distinctive of the mental work of the third step of inductive perceptual learning.

4. *Synthesis and Inference.* — Though the child becomes aware, through the above processes, of what is involved and how to construct this or that part of a given thing, though he gains a definite image and appreciation of this or that quality of an object, or comes to appreciate the particular significance of this or that fact in an event or story, complete concrete insight requires that the knowledge of separate means and ways of construction be brought together into one idea, that the different qualities of the object be associated as a whole, that the separate facts in the desired information be synthesized, and that certain inferences, varying with the need, be made in the light of the essentially new concrete idea or picture-whole acquired. This associating, this fusing, this synthesizing of the elements, separated and given significance in the preceding steps, into an essentially new concrete idea or concrete idea-whole, and the drawing of inferences on the basis thereof, of what a given object is, of how to construct a given thing, of how to solve a given problem, or of how to

overcome a given difficulty, mark the thought movement in the fourth step of this mode of learning.

5. *Application or Use.* — The essentially new concrete idea or picture-whole thus acquired supplies the basis for overcoming the difficulty standing in the way of satisfying the need calling forth the given process of inductive perceptual learning. The inciting need is sometimes gratified with the attainment of the answer to a given question or with the acquisition of desired information. There is, however, more often involved the use of the essentially new concrete knowledge obtained, in directing impulse in its expression, — that is, in directing action in overcoming an opposing difficulty, or in doing or making a desired thing, or in meeting a given situation, — and it is the use of the essentially new concrete idea or idea-whole gained to this end that characterizes the final step in inductive perceptual learning.

§ 3. The Inductive Conceptual Process of Learning

The inductive conceptual process of learning was defined above as that process of thought or of reasoning in and through which general meaning and value are given to an *essentially new* experience or group of experiences, and the meaning and value given symbolized to the self by an individual or *essentially new* class concept.

1. *The Rise of Need and of Motive.* — The occasion for carrying on a process of inductive conceptual learning arises when, in his effort to satisfy a given need, the child comes face to face with a situation which, to be readily met, involves the acquisition and use of an essentially new general idea; for example, when the child to direct his actions in giving expression to an impulse must know the character-

istics of all bats, or the principle controlling the right lever, or how to find any per cent of a given number, or what makes Niagara Falls famous. The presence of such a need and the appreciation of such a situation supply the motive for carrying through the implied process of learning, and give worth to the individual or essentially new class concept acquired. It is the rise in consciousness of such a need, the appreciation of such a situation, and the rise of the motive to overcome it that mark the first step in inductive conceptual learning.

2. *The Acquisition of Data.* — With the purpose for carrying on a given process of inductive conceptual thought in mind, the child begins to search for data — for materials which will aid in attaining the desired end. It is, however, not a search for the sense-qualities of a particular object, the elements of a particular problem, the facts of a given event or story. It is rather a search for the sense-qualities of similar objects, — such as of apples, — a search for the elements of similar problems, — say, in percentage, — or a search for the distinctive facts or features in a given whole, — like Niagara Falls, Lowell's "Longing," the Plymouth Colony, or the Missouri Compromise. The collection of such data, of such materials with reference to the mental work in hand, is a distinct movement of thought and it is this that is distinctive of the second step of this mode of learning.

3. *The Elaboration of Data.* — Here again the materials collected should not be confused with the information sought. For the attainment of the individual or essentially new class concept needed calls for a thorough working over of the data gathered with reference to the common and essential, or with respect to the distinctive elements of general meaning and value embodied in them.

There is included in doing this a more careful analysis of materials than that implied in their collection. This analysis does not consist, — if the end to be attained is a class concept, — in the separation of the data gathered with respect to a single construction, object, or story, as in the corresponding perceptual process, but in the separation of the materials collected with reference to each of several similar objects, constructions, problems, phenomena, or processes in question into their qualities, elements, factors, or parts; and even when the end sought is an individual concept, the analysis implied is far more thorough-going than that involved in inductive perceptual thought.

Fixing upon the elements of general meaning and value also implies comparison. Not, however, a comparison — as is the case in perceptual induction, — of one quality or element with a similar one previously experienced, for the purpose of adding particular meaning and value to it, but a comparison — if a class concept is sought — of the qualities or elements discovered in several similar objects, constructions, phenomena, or processes with regard to their common and essential character; or, if an individual concept is desired, it is a comparison of the elements found in a concrete whole with respect to their distinctiveness and relative importance. For example, it is a comparison of the qualities and features of one bat with those of several others, of the elements in one problem and its solution with those in different similar problems and their solution, of the factors in the process of making bricks at one point with the factors in the process of making them at other places, or it is a comparison of the characteristics of a concrete whole — such as Niagara Falls, the Plymouth Colony, "The Great Stone Face" — with those included in similar particulars,

but more especially a comparison of the features of the one in question with respect to their distinctive character and significance.

In addition to analysis and comparison, there is involved abstraction, that is, a coming, through processes of creative thought and inductive conceptual judgment, to an appreciation of certain elements in a group of objects, constructions, or problems as common and essential, or the coming to an appreciation of the distinctive character of certain elements in a given particular.

This gaining of insight into separate elements of a class as common and essential, or into particular aspects of a given whole as distinctive, constitutes the mental work in the third step of inductive conceptual learning.

4. *Synthesis and Inference.* — That the general idea may be acquired, the attainment of which supplies the guiding purpose of the process, there remains to bring together — to fuse into a mental whole — the ideas of the separate elements found common and essential in the materials under consideration, and upon the basis of this idea-whole to draw an inference or generalization with respect to all similar data, for it is through this inference or generalization that the essentially new class notion is attained. For example, the inference or generalization is the boy's definition of a bat, his idea of the principle of the right lever, his rule for the first problems in percentage. Or there remains to bring together the separate elements found distinctive of the given particular, as it is through fusing the ideas of the elements recognized as distinctive that the individual concept is attained, or that the child comes to an appreciation of why Niagara is famous, of the distinctive features in the thought and form of "Longing," or of the important facts

and the significance of the Missouri Compromise. It is this synthesis of ideas of the common and essential elements in a mass of data and the generalization on the basis thereof, or this synthesis of the ideas of the different distinctive and significant elements of a given particular and the implied if not explicit inference, which mark the movement of thought at this point in conceptual induction.

5. *Application or Use.* — The thought process is not complete, however, with the attainment of the individual or essentially new class concept. The new principle, rule, or ideal was acquired that it might be used in directing action in the satisfaction of a given need, and the culmination of the process is to be found in thus employing it. The initiating need is gratified at times with the attainment of the essentially new concept. Yet there is more often implied its application to meeting the situation, to solving the problem, or answering the question, standing in the way of satisfying the initiating need, and the use of the essentially new general idea acquired to this end constitutes the final movement of thought in inductive conceptual learning.

§ 4. The Deductive Perceptual Process of Learning

The deductive perceptual process of learning was defined, in our foregoing study, as that process of thought or of reasoning through which meaning and value are given to a *new* experience, and the meaning and value given symbolized to the self by a *new* concrete idea or idea-whole.

1. *The Rise of Need and of Motive.* — Deductive thought, like inductive, is carried on for the purpose of directing action in the satisfaction of needs. The condition, however, giving rise to a process of deductive perceptual learning is

different from that inciting a corresponding process of inductive learning, as it springs from a need which may be satisfied through meeting a situation, solving a problem, or answering a question in the light of previously acquired information, or through the acquisition and use of a new concrete idea. The presence in consciousness of such a need and the appreciation of such an opposing difficulty yield the motive for carrying on the process of perceptual deduction implied in overcoming the given obstacle and in satisfying the inciting need. The rise in consciousness of a need that may be thus satisfied, the appreciation of such a difficulty, and the rise of a motive to overcome it characterize the first step in a process of deductive perceptual learning.

2. *The Acquisition of Data.* — The mere appreciation that a given situation must be met, a given object determined, or a given problem solved, if a particular need is to be satisfied, implies some little knowledge of the opposing obstacle. The meeting of the situation, the determination of the object, or the solution of the problem in question involves, however, a more thorough knowledge than that presupposed in the mere formulation of the difficulty. To acquire the needed concrete insight necessitates the gathering of data or materials with respect to the given situation, object, or problem. To gather these data is mental work and it is the doing of it that marks the second step of deductive perceptual learning.

To illustrate, a boy finds that birds are taking the seeds from his garden and there comes the desire to prevent this. The difficulty to be met and the motive to overcome it arise in the child's mind at the same time. The mere formulation of the desired end does not, however, carry with

it a knowledge of how to attain the given purpose. This implies, at least, the gathering of certain facts with reference to the situation to be met and the collection of data with respect to the means to be employed. Or, a ten-year-old wishes to grow pop-corn and in his endeavor to satisfy his desire is confronted with the question: Is this a good place to plant it? Whatever the boy does or does not know about raising pop-corn, the answer to the question confronting him necessitates a study of the given place. In doing this he observes that the place is on the top of a high, steep hill facing south, and that the soil is a dry, hard clay, full of pebbles. Or, a child hungry from play comes upon a plate of light-colored grape-like things, — Malaga grapes. He has often eaten Concord grapes, but never before has he seen things just like these. The question arises: What are these? Are they good to eat? If the child is to learn of himself, he must observe, touch, smell, and taste the things in question.

3. *The Recall of Old Ideas.* — The sense-experiences or the facts obtained do not yield of themselves the desired new concrete ideas or insights, they are but one of the factors involved in this. Since the situation or problem is such that it can be met or solved most readily in the light of previously acquired concrete information, or through the acquisition and use of a new concrete idea or idea-whole, there is involved the bringing to mind of the particular concrete ideas gained in meeting a similar situation or in determining a similar object. The boy, for example, confronted with keeping the birds from his seeds, thinks of how he has seen others keep them from things and remembers that his friend kept them away from his cherries by putting a scarecrow in the tree. The boy with the pop-corn enter-

prise, in trying to answer his question, calls to mind the character of the place where his uncle plants his. The boy with the Malaga grapes recalls, because of recognized similarity, his ideas of Concord grapes. The bringing to mind of such concrete ideas is distinctive of a process of deductive perceptual learning in the third step.

4. *The Elaboration of Data.* - The concrete ideas previously acquired and now recalled serve as the basis for giving meaning and value with ease and economy to the sense-impressions or materials in question, or of attaining the new concrete idea or insight sought, yet in attaining the desired new concrete idea or idea-whole, there is implied both an analysis of the data collected and of the concrete idea or ideas brought to mind; there is involved also a comparison and the coming to a recognition, through creative thought and deductive perceptual judgment, of the casual likenesses and differences between parts of the situation or sense-qualities of the object in question and the memory idea of one previously met or determined, and the withholding or the transfer of concrete meaning and value to particular elements of the given data in view of recognized similarities or differences. The boy with the garden analyzes, for example, the data collected with reference to the situation facing him, also his remembrance of the one confronting his friend in keeping the birds from his cherries; he compares the two and through creative thought and deductive perceptual judgment recognizes certain similarities; in view of the similarities recognized, certain elements of the given situation take on significance and he comes to appreciate how to meet different parts of it. The one wishing to raise pop-corn analyzes his impressions of the place before him and his knowledge of where his uncle

plants pop-corn; he compares the conditions found in the two, comes to a consciousness of certain differences, and withholds from the conditions in question the meaning and value ascribed to the conditions found where his uncle raises pop-corn. The boy with the Malaga grapes analyzes the sense-impressions gained from them, also his ideas of the qualities of Concord grapes; a few differences in size, color, taste and fibre are noted, but many similarities are observed, and on the basis of the similarities recognized, the concrete meaning and value belonging to Concord grapes are transferred to the things in question. Analysis, comparison, the passing of deductive conceptual judgments, and the transfer or withholding of concrete meaning and value in view of recognized similarity or difference is, then, the work of this step of deductive perceptual learning.

5. *Synthesis and Inference.* — With insight into the several parts of the situation facing him, and into ways of meeting these, or in possession of distinct impressions of the several qualities of an object and their respective concrete meaning and value, or their lack of it, the child proceeds to fuse these into a new concrete idea and upon the basis of this draws conclusions. The boy with the garden fuses his several insights into how to meet the situation facing him, and decides he can keep the birds from his seeds by erecting a scarecrow. The one launching the pop-corn enterprise draws together his impressions of the place under consideration, and infers that it is not adapted to the raising of pop-corn. The boy with the Malaga grapes fuses his several impressions of the different qualities noted with the meaning and value he attaches to them into a new concrete idea, and concludes the things in question are a kind of grape and good to eat.

It is this associating or synthesis of the different impressions and insights gained in view of recognized likenesses or differences into a concrete idea-whole, and the drawing of inferences on the basis of the new concrete idea thus acquired, that mark the deductive perceptual process of learning in its fifth step.

6. *Application or Use.* — Since a process of deductive perceptual learning is carried on in view of a definite end, the final step in it is the satisfaction of the initiating need. The initiating need may be gratified through the mere acquisition of given concrete insight. As a rule, however, the thought process, arising as it does from the necessity of action, finds its culmination in action, and it is the direction of action on the basis of the concrete idea-whole acquired in the preceding step that constitutes the final thought movement in this process of learning. The boy with the garden, for example, in view of the concrete insight gained, erects a scarecrow; the one interested in pop-corn seeks another place; the one with the Malaga grapes eats to his satisfaction.

§ 5. The Deductive Conceptual Process of Learning

The deductive conceptual process of learning was defined as that process of thought or of reasoning in and through which general meaning and value are given to a *new* experience or a group of *new* experiences, and the meaning and value given symbolized to the self by a particular or *new* class concept.

1. *The Rise of Need and of Motive.* — The situation calling forth a process of deductive conceptual learning is similar to that giving rise to the corresponding process of inductive learning. There is, however, this difference: the

necessity of carrying on a process of deductive conceptual thought arises from the presence of a difficulty in the way of action or of satisfying a need, which can be overcome most economically and effectually through the use of a general idea or general ideas previously acquired. The presence of a need that can be thus satisfied and the appreciation of such an opposing difficulty yield the motive for thought, and it is the rise in consciousness of such a need, the appreciation of such a difficulty, and the rise of the motive to resolve the difficulty and satisfy the inciting need that is distinctive of the first step of deductive conceptual learning.

2. *The Acquisition of Data.* — The presence of a motive for doing the mental work involved in a process of deductive conceptual learning does not of itself supply the insight needed to solve the problem or to answer the question at issue. There is involved in the attainment of this the getting of additional materials of knowledge. The materials required will vary according as the resolution of the difficulty implies the acquisition and use of a particular or new class concept. The acquisition of these needed data marks the second step of deductive conceptual learning.

In case the difficulty can be overcome through the acquisition and use of a particular concept, there is need of gathering data with reference to the particular difficulty or situation in question only. Take, for example, the boy interested in growing pop-corn. If his thought is elevated to the conceptual plane, he needs to gather facts with reference to the given place only. The data gathered by the boy on this level of thinking will be similar to those collected in deductive perceptual learning, and similar to those collected in inductive conceptual learning when an

individual concept is sought; still, the data are gathered with more intelligence and attention is centered more especially upon elements which he has previously learned are of importance. Or, take the settler interested in eastern North Dakota; he needs to acquire information about this section only.

On the other hand, if the difficulty can be resolved most economically or the question answered most readily through the acquisition and use of a new class concept, there is need of acquiring data with reference to a number of particulars. The boy knowing the noun and its uses and wishing to know what a substantive clause is and what its function, must study with care the elements in a number of typical substantive clauses; likewise the boy who has previously mastered the first case of percentage and is desirous of knowing how to find profit and loss, must study a number of typical problems in profit and loss. Though the data thus collected are similar to those gathered in inductive conceptual learning when an essentially new class concept is sought, there is this difference: the facts collected with reference to the given particulars are those that the child recognizes as having been of importance in connection with particulars previously studied, and which already have for him certain general significance.

3. *The Recall of Old Ideas.* — The materials thus gathered do not of themselves yield the desired knowledge; further significance must be given them. Since the particular facts can be given this additional meaning and value most economically in the light of concepts previously acquired, there is involved the recall — in view of suggested similarity — of such general ideas as may be of service. Take, for example, the boy desirous of growing pop-corn. If his

thought is elevated to the conceptual level, after he learns that the place under consideration is dry and the soil poor, to understand the significance of these facts he no longer tries to remember the characteristics of the place where his uncle plants pop-corn, but he seeks to bring to mind the general climatic and soil conditions essential to the growth of corn. Nor does the boy wishing to know how to find profit and loss seek to remember how he solved a particular problem in the first case of percentage, but endeavors to bring to mind the essential elements in such problems and the essential steps in the process involved in their solution. This recall of class concepts previously acquired and now helpful in making clear the meaning and value of the data in question distinguishes the third step of deductive conceptual learning.

4. *The Elaboration of Data.* — Still, the concepts brought to mind merely serve as the basis of giving significance to the data gathered. The attainment of the desired particular or new class concept involves an analysis, on the one hand, of the facts collected, and, on the other, of the general idea or ideas recalled. There is involved also a comparison of the elements found in the former with those included within the latter with respect to essential similarity and difference. There is implied further the coming to a consciousness, through creative thought and deductive conceptual judgment, of the essential similarities or differences between the elements in the given data and the elements of the given general idea or ideas, and the transfer in view of recognized essential similarities, or the non-transfer in view of recognized essential differences, of general meaning and value to particular elements of the data in question.

To illustrate, the boy who wishes to grow pop-corn needs to acquire a particular concept, and after learning the facts with reference to the place in question and having recalled the general conditions essential to the production of corn, analyzes into their constituent factors the given data and the conception brought to mind; through processes of comparison, creative thought, and deductive conceptual judgment he comes to see that the respective conditions are essentially different from those conducive to the growth of corn, and for this reason withholds the general meaning and value belonging to conditions that are favorable. Or, the boy who wants to know how to solve simple problems in profit and loss and is therefore in need of a new class concept, analyzes the examples in question into their factors, also the rule covering the first case of percentage; through comparison, creative thought, and judgment he notes that the common elements in the examples under consideration are essentially similar to those imposed by the rule, and seeing this transfers to the elements in question the general meaning and value that he has previously learned belong to such elements. This analysis of the data and of the concept or concepts brought to mind, this comparison of the elements included in each, the coming to the appreciation of essential likenesses or differences, and the consequent withholding or transfer of general meaning and value constitute the fourth step in this process of learning.

5. *Synthesis and Inference.* — In possession of ideas of the constituent elements in the data in question, and in possession of insight into the general meaning and value belonging or failing to belong to the several elements, the child fuses these ideas and insights into a particular or new

class concept and on the basis thereof draws inferences or generalizes with reference to how to answer a given question, to meet a given situation, or to solve a given class of problems. The prospective settler with clear ideas of the soil, the moisture, and the temperature of eastern North Dakota, and conscious of the general meaning and value adhering to such physical conditions, brings his several impressions and insights into a particular concept, that is, sees in eastern North Dakota a particular expression of the general conditions of agriculture, and in the light of the particular concept acquired infers that this section is suited to general farming. The boy with mathematical interest fuses his ideas of the essential elements in the given problems and his general insight into how to handle such mathematical elements into a new class concept, and on the basis of this formulates a rule covering all problems in simple profit and loss. This synthesis of insights into the general meaning and value of different elements of experience, or into their lack of it, the creation thereby of particular or new class concepts, and the drawing of inferences or generalizing on the basis of these mark the intellectual work of deductive conceptual learning in the fifth step.

6. *Application or Use.*— As with other modes of learning, the need giving rise to a process of deductive conceptual learning may be satisfied with the acquisition of the resulting insight. The process culminates as a rule, however, in the application of the concept gained in overcoming the difficulty which stands in the way of so acting as to gratify the inciting need; and it is the use of the knowledge acquired in directing action to this end that characterizes the final thought movement in deductive conceptual learning.

§ 6. The Learning Processes Abridged and Unabridged

Such are the movements and characteristics of thought within each of the learning processes in which elementary education is particularly interested. It is not claimed, however, that in the exercise of a given learning process the thought movement passes through each of the several steps. For the learning processes are often abridged, that is, certain steps are wholly or in part omitted,— it may be the step of the acquisition of data, or of recall, or of elaboration, — depending upon the learner and upon what is being learned. Even when a process of learning is unabridged, that is, when there is no omission of steps,— and this is seldom the case when the child is left to himself, — there is much going forward and backward, as, for example, from the step of the elaboration of data to that of the acquisition of data, and *vice versa*. Nevertheless, it is held, when the learning processes are unabridged and exercised in their most perfect and effective form, that the steps within each are as indicated and the character of the thought as described.

§ 7. Range and Period of Operation

From the nature of the ideas gained in and through the inductive perceptual and conceptual processes of learning, it is obvious that the operations of the former are limited only by the essentially new concrete ideas, and those of the latter by the individual and essentially new class concepts to be obtained. Similarly, the operation of the deductive perceptual process of learning is limited only by the new concrete ideas and the operation of the deductive conceptual, by the particular or new class concepts to be acquired.

Between two and ten, the child is employed, in the main, in getting concrete ideas or picture-wholes. For this reason, it is during these years — the kindergarten and primary school period — that the inductive and deductive perceptual processes of learning are in active use. From ten on, the child is occupied more especially in acquiring general ideas. Consequently it is during this — the grammar school period — that the inductive and deductive conceptual processes of learning are employed.

§ 8. Educational Principles

In view of the nature of the learning processes and the type of ideas acquired in and through them, we have the following principles applicable to directing the child in the acquisition and use of knowledge:

1. In leading the child to acquire an essentially new experience, in directing him in working it over into an essentially new concrete idea or ideas, and in guiding him in the use of this essentially new knowledge, procedure must conform to the movements and characteristics of thought as manifest in the inductive perceptual process of learning.

2. In leading the child to acquire an essentially new experience or group of experiences, in directing him in working it over into an individual or essentially new class concept, and in guiding him in the use of this essentially new knowledge, procedure must conform to the movements and characteristics of thought as manifest in the inductive conceptual process of learning.

3. In leading the child to acquire a new experience, in directing him in working it over into a new concrete idea or ideas, and in guiding him in the use of this new knowl-

edge, procedure must conform to the movements and characteristics of thought as manifest in the deductive perceptual process of learning.

4. In leading the child to acquire a new experience or group of experiences, in directing him in working it over into a particular or new class concept, and in guiding him in the use of this new knowledge, procedure must conform to the movements and characteristics of thought as manifest in the deductive conceptual process of learning.

Readings

Angell, *Psychology*, pp. 121–132, 137–140.
Thorndike, *Elements of Psychology*, pp. 19–73.
Principles of Teaching, pp. 42–50, 133–178.
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Hobhouse, *Mind in Evolution*, pp. 112–139.
Swift, *Mind in the Making*, pp. 169–218.
McMurry, *Elements of General Method*, pp. 212–296.
Adams, *Herbartian Psychology Applied to Education*, pp. 135–195.
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Miller, *The Psychology of Thinking*, pp. 91–129, 189–298.
Dewey, *How We Think*, pp. 157–200.

PART II

APPLICATION OF PRINCIPLES

tion is in its relation to the life of society and not in its relation to the life of the individual.

1. *Meaning from Side of Society.* — The social meaning of education appears when the work of the school is considered with reference to the first of the above principles.

The existence of society is conditioned, as we have seen, by certain psychical capacities on the part of its members, by a certain common knowledge of means and of ends possessed and applied by them, and by certain purposes and habits common to their activities. If the young of America were to be deprived of the opportunity of gaining this mental development, of obtaining this common fund of knowledge, of acquiring these common modes of feeling, common aspirations, and habits of action, the forms of democratic life as we know and enjoy them would disappear with the next generation.

It was, however, the Ancients and not the Moderns who first appreciated the meaning of education with respect to the preservation and continuation of social life. So thoroughly was this phase of its significance grasped by Orientals, — ancient Egyptians, Persians, Chinese, — that this constituted for them its whole meaning. In consequence, there resulted, for example, in China, what has been characterized "education as recapitulation," that is, a system of education devoted to transmitting to the on-coming generation that knowledge and to inculcating those habits of conduct essential to the continuance of society in the next generation as it exists in the present. A like idea prevailed among the Spartans. With them every aspect of education was determined by social needs and had reference to the continuation of Spartan institutions as then constituted. Even with Plato the sole

problem was, given an ideal society, how can its continued existence be conserved through the school?

With the submersion of Greek and Roman life by the tides of barbarianism from the North, the social significance of education was lost to view; with the over-emphasis of individualism in earlier modern times, it was ignored; and only with the establishment of modern democracies was it again appreciated. This appreciation has found varied expression. In the Ordinance of 1787, we find these oft-quoted words, "Religion, morality, and knowledge, being necessary to good government and the happiness of mankind, schools and the means of education shall forever be encouraged." The following has found place in some form or other in the constitution of every state of the American Union, "Knowledge and learning generally diffused throughout all parts of a state being essential to the preservation of a free government, it shall be the duty of the general assembly to provide by law for a general and uniform system of schools, wherein tuition shall be without charge, and equally to all." Webster enunciates the same thought, "On the diffusion of education among the people rest the preservation and perpetuation of our free institutions." Condorcet reflected but the common mind of the French Revolution, when he said, "A free government that does not undertake the universal instruction of its citizens will come to destruction."

Long after the meaning of education with reference to the preservation and continuation of society was appreciated by statesmen and embodied in law by America and the more progressive nations of Europe, educational thinkers came to accept this view. Perhaps no one has done more of late to force it to the front than Dr. Dewey,

who says,[1] "The school is fundamentally an institution erected by society to do a certain specific work, — to exercise a certain specific function in maintaining the life and advancing the welfare of society. The moral responsibility of the school, and of those who conduct it, is to society."

That the social order must develop and that it must be continuously improved, if it is to perform its function, is a relatively new conception. Society, however, does not develop and improve of itself. This is conditioned, as we have seen, by the constructive and creative ability of certain of its members. The members of society are not born with the ability to initiate social changes, to create new social ideals. Before the most gifted are able to make even the smallest contribution to social improvement, they must receive years of nurture. Limit the on-coming generation to opportunities alone requisite to provide the psychical development in the individual essential to the existence of the social whole, and further social progress and social perfection are stopped. Under such conditions, one period of social life is like another — the customs, traditions, and ideals of one generation are handed on unchanged to the next, and the succeeding generation is powerless to alter and improve. A society, therefore, that would fulfill its function and would be continuously adjusted thereto, must provide for its progressive development and perfection. The means through which this may be done is the school, and it is in viewing education in relation to the development and perfection of the social body that its further meaning from the social side is to be appreciated.

[1] Dewey, *Ethical Principles Underlying Education*, p. 10.

The sociologists were the first to call attention to this aspect of its significance, and the chief of these was Lester F. Ward.[1] So impressed was he with the thought that education is the ultimate means of perfecting social life, that he believed, "If society ever becomes fully conscious of the end of its being and of the relation of the various means thereto, after its regulative function, it will concentrate its entire energy upon education." "The function of education, from a societary point of view," says Howerth,[2] "is to modify and accelerate social evolution."

Educationists were quick to agree with the sociologists. "Education," writes Dewey,[3] "is the fundamental method of social progress and reform." "Through education society can formulate its own purposes, can organize its own means and resources, and thus shape itself with definiteness and economy in the direction in which it wishes to move." "Every teacher should realize the dignity of his calling; that he is a social servant set apart for the maintenance of proper social order and the securing of the right social growth."

The meaning of education, from the social point of view, is therefore to be found in the fact that it is the institution through which society conserves its existence and provides for its perfection, or secures the continuation and progressive adjustment of itself to its function.

2. *Meaning from Side of Individual.* — On the other hand, the significance of education for the individual is suggested by the last five of the above principles.

Notwithstanding the individual is predisposed by hered-

[1] Ward, *Dynamic Sociology*, vol. ii, pp. 631, 589, 591, 632–633.
[2] Howerth, *Fifth Year Book of National Herbartian Society*, p. 75.
[3] Dewey, *Educational Creeds of XIXth Century*, pp. 17–19.

ity to social life in general and to that of his own people in particular, wholly unassisted, he is unable of himself to attain that development of hereditary capacity essential to life under social conditions, and apart from society there is no human life as we know it. The psychical development needed to enable the child to enter into and enjoy modes of social life is secured to him by education. Education means, in consequence, from this point of view, the process of humanization and socialization whereby the human will is given such expression and direction, through the appropriate development of the intellect with respect to form and content, that the individual is able to participate in social life and prepared to live according to its forms and standards, or is prepared to live economically and spiritually as a person.

The individual does not seek, however, to live merely as a person, but he also seeks his own highest development and self-realization. The development and self-realization that the individual can attain depend in part, as we have seen, upon the materials of culture that he can make his own. Of himself he is able to create but a small part of the materials of culture involved in his highest development. These must be supplied him by the social order of which he is a member; and it is in this connection that the further significance of education from the side of the individual is to be grasped. For it is the process through which the cultural resources of society are so placed at his disposal that, through making these his own and using them, he is able to give such form and content to his intellect and such expression and direction to his will as enables him to attain the highest development and self-realization under the given conditions. In short, education is the

process through which the child is prepared not only to live as a person, but prepared also for the fullest and richest personal life.

3. *Unity in Meaning.* — The meaning of education differs, therefore, according as it is regarded from the side of society or from the side of the individual. This difference arises from considering its meaning as if society and the individual were unrelated. By reason, however, of the relation between society and the individual, and by reason of the second of the foregoing principles, education has but one meaning and may be defined as that process through which the development and the highest life of the individual is conserved through so humanizing and socializing him as to conserve directly the existence, development, and perfection of society.

§ 3. The Aim of Education

1. *Aim from Side of Society.* — The aim of education, when formulated in view of the first of the foregoing principles, is to provide for the existence, development, and the perfection of the society supporting the given system of schools.

When thus formulated, the aim of any given school system becomes national and not international in its scope; it has to do with the life of a given social body and not with the world at large. In consequence, the aim of the school system of no two societies can ever be the same, unless these perchance are identical in nature, members, and needs. The working aim of the schools of China will therefore be one thing, of Germany, another, and of the United States, still another. Yet this ought not to disturb the teacher. It does not stagger the scientist when

the actions of a principle are not always the same. Differences are explained, not through repudiating the principle, but through finding differences in the materials acted upon, or in the conditions under which the principles are applied. So it should be with the teacher. He ought to see, even though education must be made essentially national in its purposes and ends, and even though these vary with the nation, that the principles determining the aim of the school are universal.

The end of education as thus stated becomes more concrete and real if an analysis is made of the different phases of social life, and if the aim of education is stated with reference to these. The phases of societary life are the industrial, the social, the intellectual, the artistic, and the moral-religious. A word will make clear the meaning of each.

To the industrial or economic phase of society belong those activities having to do with the production and exchange of the commodities of life, and especially with those employed in the satisfaction of physical and material needs. To discuss the social character of production and exchange is not our purpose. Suffice it to say that around and out of these have arisen a multitude of occupations, trades, associations, and professions, each of which presupposes a certain kind of labor, the application of a certain amount of scientific or technical knowledge, and "trade traditions," and the presence and use of more or less skill. There belong here also certain habits of action, certain ideals and principles of conduct adhering to particular trades and occupations, and a body of common and statute law applying to all.

The social phase includes the family, "social" intercourse,

and political life. The family, as an institution, rests upon insight into the relations and mutual obligations of husband and wife, and those existing between parents and children; it rests also upon customs, knowledge, principles, and ideals, while it is safeguarded by a body of law defining its legal status and fixing the standards of married life.

By "social" intercourse is meant "society" as this term is generally used, and it comprehends all free and voluntary intermingling with others, outside the family circle, for the sake of "social" enjoyment. The forms taken by "social" intercourse are legion; there is mingling one with another in conversation, entertainments, "societies," and clubs of every description. Out of these modes of association have arisen rules of etiquette, customs, ceremonies, ideals of politeness, of sociability, of good breeding, of regard and consideration for others, and these are a part of "social" intercourse and constitute its basis.

Political life, as the third element of the social phase, comprises all that has to do with the conservation of the social body through the direct means of government. To it adhere forms of local, state, and national government, and all activities on the part of officials and the people related to their administration. There are to be included also knowledge of the nature and character of the different units of government, insight into the principles underlying the life of the social whole as embodied in the constitution of the state and nation, and an appreciation of the implications of these with reference to social and individual life.

The intellectual phase embraces those labors of men directed toward mental culture and the acquisition and diffusion of knowledge. These may be those of private individuals, of special associations, or of society as a whole.

The endeavors of private individuals vary from the acquisition of knowledge for personal ends to its acquisition and dissemination for the use of others. The work of special associations is equally varied; there are literary and scientific associations, from the country debating club to the Society for Psychical Research, each having its special object and accomplishing its purpose in its own way. The labors of society in this direction touch almost every intellectual interest, range over the whole field of learning, and utilize almost every known means: papers, bulletins, schools, expeditions, and surveys. Back of this intellectual activity there lies the world of extant knowledge, conceptions of its general and special utility, ideals of scholarship and of literary attainment, habits of thought, and traditional attitudes with reference to the acquisition, diffusion, and preservation of learning.

The artistic phase comprehends all that relates to the production and enjoyment of the beautiful; and this occupies a larger place than casual thought reveals. With this phase are to be associated those activities having to do with the production of poetry, music, painting, sculpture, and architecture; also those activities connected with æsthetic enjoyment, the preservation of art, and the cultivation of a love of the beautiful — such as concerts, exhibitions, excursions, art and music schools, museums, and public parks. As the basis and foundation of this activity and as an essential part of this phase of social life, there exist a fund of art knowledge, a world of art treasures, ideals of the beautiful, well-fixed artistic tastes, a deep sense of æsthetic appreciation, habits of artistic reaction, and a well-defined body of art customs and traditions.

To the moral-religious phase belong those actions of the individual, prompted by a sense of right and wrong, and by a sense of duty or obligation to God, also those associations having primarily a moral-religious purpose, among which are charity boards of various types, fraternal and aid societies of divers descriptions, reformatory and eleemosynary institutions, and, finally, the church with its innumerable auxiliaries and corollaries. All these individual and institutional activities are but the expression of a system of moral and religious ideals: ideas of right and wrong, of honor, of honesty, of courage, of purity, of charity, of love, of manhood and womanhood, of duty to one's self, to others, and to God; and these ideas are grounded in a world of experience and teachings.

Such in outline are the phases of social life, each embracing a distinct range of individual and social activities, and based upon a specific fund of customs, knowledge, and ideals. No hard and fast line can be drawn between them, for they are reciprocally related. Taken together, they constitute the organic life of society, and are not only vital and necessary manifestations of it, but represent the directions in which society must progress. Ignore any one of these phases, and the hand of death is laid upon social life in its unity.

From this point of view, the societary aim of education may therefore be said to be to provide for those modes of activity in the on-coming generation, through the transmission of those customs and traditions, of that knowledge of means and of ideals requisite to secure, in the next, the preservation and progressive development and perfection of the different phases of the life of the nation supporting the given schools.

2. *Aim from Side of the Individual.* — On the other hand, the individualistic aim of education is conditioned more especially by the second of the foregoing principles, and when formulated with regard thereto, it is so to humanize and socialize the individual that he may be prepared to live, to develop, and to attain the highest self-realization under given social conditions.

Such a statement of the aim of education with reference to the individual seems at first thought to fall short of that given by Kant, "There is within every man a divine ideal, the type after which he was created, the germs of a perfect person, and it is the office of education to favor and direct these germs in their development." Or, as defined by Pestalozzi, "The aim of education consists in developing, according to natural law, the child's various powers, moral, intellectual, and physical, with such subordination as is necessary to their perfect equilibrium." Or by Froebel, "By education, then, the divine essence of man should be unfolded, brought out, lifted into consciousness, and man himself raised into free, conscious obedience to the divine principle that lives in him, and to a free representation of this principle in his life." Or by Spencer, "To prepare us for complete living is the function which education has to discharge." Phrases, however, like the development of "the germs of the perfect person," the unfolding of "the divine essence of man," "the harmonious and perfect development of the faculties," "complete living," when used apart from social relations, have little content. The only "perfect person" is the one in harmony with a given social pattern, the one whose life is fashioned to given social standards; "mental faculties" are not developed independent of use and, consequently, apart from specific social

demands, there is no "development and perfection of faculties"; and "complete living" results alone from life perfectly adjusted to given social situations. The real meaning of these definitions of the masters therefore only becomes apparent when they are brought into relations to a given social life. Consequently, our definition does not fall so far short in idealism; neither is it crass nor materialistic, but as idealistic as the facts and conditions of human existence will permit.

By thus recognizing social conditions as the dominant factor in determining the life for which the child is to be prepared, it must be admitted that his capacity for life and development is to a certain extent ignored. But it matters not to education, in a sense, what ability the child may have; the only life for which it can prepare him is that approved by the nation supporting the given schools. Still, since the life which the individual is able to enjoy, notwithstanding he may have capacity for higher development, is conditioned by the society of which he is a member, that education which seeks to fit him for life as sanctioned by the nation sustaining the given schools is the education which prepares him on the whole for the highest development and self-realization attainable by him.

The working aim of education, from the side of the individual, will change therefore with every considerable variation in national conditions. It will be one thing in the United States, another in England, and still another in Russia; and by reason of the differences in the ends sought, the results of the educative process will in no two nations be the same. The individual, when educated in accord with a given aim, will be prepared for life in the society of

which he is a part, but will not be equally well fitted to become a member of another nation.

The individualistic aim of education may be rendered somewhat more concrete, if stated in terms of the last four of the foregoing principles and in view of the relation between the psychical nature of the individual and the phases of social life.

The different phases of society are the resultant of one or more of the primal impulses as these have found expression under the guidance of the intellect, the industrial phase arising primarily from the expression and determination of the impulse of self-preservation, the social phase being the resultant of the impulse of race-preservation and of sociality, the artistic phase the outgrowth of the art impulse. Taken as a whole, these phases are but the objective expression in their developed forms of the will and intellectual life of individuals, and represent the highest actualization of their psychical nature under given social conditions. Society in its different phases and the will and intellectual capacities of the individual are consequently not opposed to each other. The phases of social life can be interpreted only when read backward into terms of the will and intellectual capacities of the individual, and these can be interpreted only when read forward into terms of the different phases of social life.

From this vantage ground, the aim of education from the side of the individual may be said to be so to develop his intellect, through bringing him to accept such ideals of life and through supplying him with such knowledge of means, that he is able to give that expression, control, and direction to his primal impulse requisite to enable him to participate in the different phases of the life of the

nation of which he is a member, to enjoy life therein, and to attain under the given national conditions the highest development and self-realization possible to him.

3. *Unity in Aim.* — The aims of education, as thus formulated from the side of the individual and of society, appear to be somewhat contradictory. By reason of the reciprocal relation between the individual and society, and by reason of the first two of the foregoing principles, the social and individualistic aims of education cannot be in opposition. For each implicitly includes the other, though in a given formulation this may not be apparent. The foregoing related — though one-sided — statements may therefore be thus drawn together: The aim of any school system is to provide for the existence, the development, and the perfection of the nation supporting the given system of education, through transmitting to its on-coming members such knowledge of means and ideals and through giving such expression and determination to the will that they are fitted to participate in the life of the given nation and to contribute to the continuation, development, and perfection of each of its phases, and are thereby prepared for the highest mode of life, the highest development and self-realization possible to them under the given national conditions.

§ 4. The Aim of Elementary Education

If this aim of education is to be accepted and is to be made the basis of school work, it remains, in view of our interests, to determine in the light thereof the aim of the elementary school.

The function of a given school in a system, apart from the aim of the system as a whole, is conditioned by three

factors: by the capacity of its pupils, by the length of the period devoted to its work, and by whether its students will receive further school education.

The elementary school period extends with us from the sixth to the fourteenth year inclusive. During this period the child is immature and his capacities are relatively undeveloped. For all save approximately five per cent, the elementary school is the only one attended, as under present economic conditions the school life of all but the more favored few must culminate with the attainment of that physical strength enabling them to join the ranks of the wage-earners.

In view of these limiting conditions and the object of our system as a whole, the aim of the elementary school is to provide primarily for the continuation in its common and basic features and secondarily for the progressive development of the social and national life of the American people. To fulfill its primary function, the elementary school must so prepare the on-coming generation as to enable it to enter into and make its own the common modes and standards of life sanctioned by our social order. To fulfill its secondary function, it must so prepare the individual that he is at least able to appreciate and to adjust himself to whatever fundamental changes there may occur in our national life during his time. The service of the elementary school in relation to social improvement is a passive one. For, owing to the limitations imposed upon the elementary school, though it can so prepare the individual as to enable him to appreciate and to adjust himself to social improvement, it cannot as a rule equip him to become an active agent in the initiation of social reform. Nevertheless, the service of the elementary school in this

respect is important, as it provides for social plasticity and the approval of the many — the prime condition of social development.

In the fulfillment of the function of the elementary school, there is implied the transmission to the on-coming generation of those ideals and of that knowledge of means essential to the preservation, in their fundamental features, of the industrial, the social, the intellectual, the artistic, and the moral-religious phases of American life as now constituted, and essential to a full, rich, individual life as determined thereby. There is implied, also, the bringing of the on-coming generation to accept the ideals and the knowledge of means transmitted, and teaching it how to use these in giving the will such expression, control, and direction that action is brought into conformity to present social practices and standards. There is implied in addition the giving to the rising generation that insight into and that skill in the use of the tools of learning necessary to render accessible the realm of general knowledge, for it is the glory of our democracy that it gives every man, notwithstanding his early life and advantages, an opportunity — within the limits sanctioned — to become whatever he may desire, and a command of the tools of learning is essential to open the way. Finally, there is implied the fostering of those habits of mind and those modes of thought conducive to toleration and open-mindedness, the prerequisites of progressive social adaptability. There is implied, in short, in the fulfillment of the function of the elementary school the giving of that education essential for all to have — whatever their educational destination or future occupation — in order to provide for the preservation and the continuation in their basic features, of all the phases of our national life.

Statistics show that those enjoying only an elementary education occupy, in the main, the more humble positions in our social order and pursue the more ordinary occupations, such as farming or factory work. For this reason, the opinion has arisen that the elementary school should minister directly to the practical needs of the "working classes" and prepare indirectly, if not directly, for the more common occupations of life. Even though those completing their school education in the elementary school do constitute the humbler classes, and do fill the ranks of unskilled and non-professional labor, this is no final argument why our elementary school should be made a "trade school." Trade school or vocational training is essentially secondary education, and should be built upon or follow the work of the elementary school.

In view, however, of its function, elementary education must be intensely practical, touching life at the point of greatest need. By reason of the relative importance of the industrial phase of social life and of the worth to the individual of being able to make a living, the elementary school must give large place to those branches of study and to those activities having an industrial bearing, while special courses of a decidedly practical character may well be provided for children of limited capacity, or behind their grade, who are looking toward early entrance upon life-pursuit. Yet the elementary school can know no "class" or "trade" as such; it can minister only to social needs and to the need of the citizen, and the citizen is more than the position occupied and the "trade" followed by the man: the citizen is one who must accept as his own the common standards and modes of life approved by our social order and be a conservator of our national life as a

whole. Such an education fits the individual at least indirectly for the ordinary occupations, even though its primary object is so to prepare him that he may become a conservator of the life of the American people in its common and fundamental features, and as a member of the American democracy live the fullest individual life possible to him under the given social conditions.

Readings

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Cubberley, *Changing Conceptions of Education.*

CHAPTER VII

THE CURRICULUM OF THE ELEMENTARY SCHOOL

1. *Education is a function of society, and the educational system of a given society must be such as will provide for its existence, development, and perfection.*

2. *That system of education which provides for the existence, development, and perfection of a given society is at the same time the system which will provide for the highest mode of life, the highest development and self-realization of its members.*

3. *The giving of appropriate expression, control, and direction to the will, or the development of the will, constitutes the primary work of education, — the end to which every phase of it must be subordinated.*

4. *The development of the intellect is the secondary work of education, and the intellect must be so developed with respect to both form and content and only so developed as to give to the will the necessary expression and the desired determination.*

5. *Education must seek in each period of child life, to give to the will that expression, control, and direction, and to the intellect that form and content appropriate to the development of the distinctive will and intellectual characteristics of the period, appropriate to secure a normal will and intellectual development in the succeeding one, and appropriate to secure the will and intellectual development desired.*

6. *Education must seek to lead the child, in each period of*

life, to acquire such experience, to direct him in working this over into such knowledge, and to guide him in making such use of this knowledge as will give to the will and to the intellect a development appropriate to the period, appropriate to secure a normal will and intellectual development in the succeeding one, and appropriate to secure the will and intellectual development desired.

§ 1. The Problem

The means through which the aim of education is realized are instruction and school organization.

Under the former are to be included the materials to be presented, or the curriculum, and methods of instruction. If we turn to the curriculum, our problem may be stated thus: In view of the above principles and the aim of elementary education, in what ways do the two factors — the ends and interests of which are conserved through the educative process — enter in to determine the curriculum of the elementary school?

§ 2. The Materials of the Curriculum

The objective factors of social life were found to be: natural science, social science, literature, art, and religion. We also learned that, without these factors in some form or other, society neither exists nor develops. On the other hand, it was found, in studying the individual, that his development presupposes materials of culture. Upon examination, the materials of culture necessary to the development of the individual were found to be the objective factors implied in the existence and development of society. The inference to be drawn is, if education is to conserve both the interests of the individual and society, these

objective factors must constitute the subject-matter of instruction or the materials of the curriculum.

§ 3. Factors Determining the Curriculum

Although the so-called objective factors are essential to the continuation and improvement of the social order and condition the development of the individual, all parts of these as now known are not equally essential. Even if they were, the child has neither the capacity nor the time to master them. There is need, therefore, from the point of view of the elementary school, to select from this world of possible material those aspects to be included within the curriculum. The doing of this necessitates fixing upon the conditioning factors and upon how each enters in to determine a given course of study. These factors are the life of society and of the child.

§ 4. Determination of Elementary School Curriculum by Society

1. *Determination by Given Society as a Whole.* — A given society or nation, in view more especially of the first of the above principles and in view of the aim of elementary education, makes this claim upon the curriculum of the elementary school: Its course of study must contain those aspects of the objective factors which will provide most economically and effectually for the continuation, in its basic features, of each of the phases of the given national life.

This claim serves, first, as the basis for determining the range of studies to be included within the curriculum. Each phase of social life presupposes, as we have seen, one or more of the objective factors: the industrial, resting

in particular upon natural science; the social, upon social science; the artistic, upon art; and the moral-religious, upon ethics and religion. Elementary education has as its aim not the preservation of one or two phases of social life, but the preservation, in their fundamental features, of all its phases. In consequence, there must be included within the curriculum of the elementary school aspects of each of the objective factors. That is, there must be included, in some form or other, natural science, social science, literature, art, and religion. The omission of any one or more of these elements, as is too often the case, militates materially against the elementary school fulfilling its function. All of these elements are essential, if the elementary school is to do all that it should do.

This claim serves, second, as the basis for determining the particular studies to be included. Mathematics, as a part of natural science, comprises arithmetic, algebra, geometry, trigonometry, calculus, etc. History, as a branch of social science, includes the story of all nations — ancient, mediæval, and modern. Under language — a phase of literature — is to be brought the medium of oral expression of all living peoples, as well as of many extinct. Yet what mathematics, what history, what language, what literature, what art shall be selected as materials of elementary school instruction?

The individual, with his particular capacities, likes, and dislikes, cannot serve as the determining basis. For, if a study is regarded as the medium of bringing the child to the appreciation of given ideals or to an appreciation of a given knowledge of means, or both, the ground of deciding whether these ideals or this knowledge of means is of worth is not in the life of the individual, but in the life of the

given social order of which he is a member. Neither does culture nor the so-called "discipline of the mental faculties" supply the needed basis. For culture and mental discipline have meaning with reference to a given social situation only, and what is regarded as culture and discipline by one nation may not be so regarded by another. On the side of culture and discipline, Greek, for example, is universally recognized as the language *par excellence*, but merely for this reason it cannot be included within the course of study of the elementary school. In short, there is no basis of determining what aspects of the different objective factors shall be admitted into the elementary school curriculum as subjects of study, other than the claim imposed by each phase of the given national life.

When the curriculum of our elementary school is determined in view of this claim, it must at least include of natural science: physics, chemistry, botany, and zoology – elementary science – (with special reference to conservation and production), hygiene and sanitation, geography (especially that of the United States), domestic science, manual training, and arithmetic; of social science: United States history; of literature: English language, literature (especially American), and writing; of art: music and drawing; of religion: ethics (especially American institutions and standards). The right of any one or of all of these studies to a place in our elementary school depends upon the extent to which it embodies ideals or knowledge of processes and means essential to the preservation, in their basic features, of one or more of the phases of our national life. United States history, for example, has a place because it acquaints the child with the movements which have brought about our social order and with the

principles and ideals underlying it. The child is thereby prepared to act intelligently in the present and to do his part in the continuation of our democracy. In a similar way, the right or the lack of right of each of the above branches of study to a place in the curriculum may be determined.

To admit given studies into the curriculum of the elementary school in view of the claim imposed by national life, determines the elementary course of study in a general way only. For, during the last few decades, the development of materials that may be included within the studies of the elementary school has been wonderful. Not only have there been additions to literature, but the literature of the world has, within the last quarter of a century, been rewritten from the point of view of the child and brought within the range of his understanding. Similarly with history: Not only has the story of all nations been retold with a view to the interests of the child, but each nation is adding day by day to history. Likewise with geography: Volumes have been written in late years upon land forms, climate, and geographic influences; new industries have come into being, new lines of travel and commerce developed, all adding to the possible subject-matter of the study. Similarly with music: Fifty years ago, there was little music adapted to the ability and appreciation of the child, whereas today there is an abundance of such music.

This increase in knowledge and the impossibility of teaching all that might be brought into the studies of the elementary school have led to three convictions:

First, we have come to see that the studies of the elementary school cannot be regarded as sciences. To view

a study as a science is to include within it, apart from whatever practical value this may have, all information belonging to the given line of investigation. For example, geography, as a science, comprises all knowledge having to do with the earth in relation to man; arithmetic, all that has to do with number in application to measurement. The history of the United States, as told by Avery, comprises sixteen large volumes. In short, the increase of knowledge has forced the teacher from viewing the studies of the school as sciences and laid upon her the necessity of selecting from the possible materials that which is to be taught in a given subject.

Second, we have come to see that the studies of the school are not static, — the same today as yesterday, — but that there is constant change in their content. So great have these changes been that there is a radical difference between the three R's of today and of fifty years ago, between the history and geography of the present and of the early seventies. In a word, we have come to see that the studies of the elementary school change in respect to content with every considerable increase in knowledge and with every modification in the conditions controlling the life of the school.

Third, it is evident that the studies of the school are but a means to an end. That is, they are not things of worth in themselves, but things to be used in the accomplishment of definite practical purposes. The test of instruction lies not in whether the child has acquired a specific amount of a given kind of knowledge, but whether he has been enabled through the study of a given branch to do certain specific things, — brought to act in certain desired ways.

The increase in knowledge and the rise of these convic-

tions have rendered more important than ever before the question: Of the materials available, which shall be included within the studies of the school?

In answering this question, it is important to distinguish fact from principle. A fact is something done, or that has come to pass, — an act, an event, an item, or circumstance, — whereas a principle is a large truth, an organizing idea, a conception, an ideal, or a belief that exercises general directive influence upon life and conduct. The facts of a study are numberless. There are, for example, sixty-one thousand and more postoffices in the United States; the name and location of each might be learned as geography. The facts about the battle of Gettysburg alone fill a dozen volumes the size of an unabridged dictionary, all of which might be included in the study of United States history. There are some 450,000 words in the English language, each of which might be brought into the study of the parts of speech in grammar. On the other hand, the number of principles, interpretative and organizing ideas or ideals of life in a given study are relatively few. This is particularly true in such branches as arithmetic and grammar, and almost as true of literature, geography, and history.

Principles are the valuable parts of any subject; for it is through these that facts or events are interpreted and organized, that our emotions and sentiments are permanently aroused and crystallized, that life is defined and action controlled and directed. From this point of view, facts are of importance and of value only in so far as they enable the child to gain insight into principles, and afford opportunity to gain control of these through application and use. The facts of a study should not, however, be

ignored nor their worth underestimated, as they bear the same relation to the right acquisition, to the understanding, and to the power to apply large ideas as the mining of quartz does to the getting of gold. Still, it is the principle, the belief, the ideal illustrated by the facts and not the facts in themselves that have value.

In the selection of the materials to be included within a given branch, therefore, such facts and only such should be admitted as are on the one hand best suited to enable the child to acquire with ease and economy and on the other are needed to give command in use of the larger teachings of the subject. The test to be imposed upon every fact or set of facts before these are admitted into a study of the school is therefore this: Is this fact or set of facts necessary to the ready understanding and control of a principle or ideal belonging to this subject and at the same time, of all the possible facts, the best adapted to yield such insight and power?

Though there are relatively few large truths in any study, the form these truths take varies, as the same principle or ideal finds expression in a variety of ways. The central idea, for example, in Hawthorne's "The Great Stone Face" is: We become what we strive to become. This is also the commanding idea in "The Blue Bell," by Van Dyke, in "How Cedric Became a Knight," and is practically the thought of Longfellow's "Excelsior" and Lowell's "Longing," as well as of other selections. Likewise in arithmetic: Whenever two elements of an arithmetical problem are given, the third may be found, and this is true whether in whole numbers, fractions, or in percentage and its applications. Similarly, the noun idea is basic in the conception of the substantive infinitive, substantive phrase, and

substantive clause, but the form the idea takes differs in each case. In history, relatively the same experiences are repeated in the exploration and settlement of the different sections west of the Alleghany Mountains; to know Daniel Boone and the settlement of Kentucky is consequently to know the pioneers and early history of other states. Different men typify the same ideas and standards of courage and honesty, so to know William Lloyd Garrison is to know all abolitionists. The same development is repeated again and again in different sections, and for this reason the history of transportation is everywhere essentially similar. Likewise in geography: The Atlantic coast and coastal plain are typical in their geographic significance of all coasts and coastal plains, and the Mississippi River system is typical of all rivers. Dairying as carried on in Southern Wisconsin is representative of dairying in other sections; so also fruit growing in New York, lumbering in Michigan, gold mining in California, coal mining in Pennsylvania, and steel making in Cleveland are typical industries. To admit into a study all the different expressions of a process, a principle, an idea, or an ideal is consequently to multiply detail and add confusion and complexity.

The further test that must be imposed upon the materials to be admitted into the studies of the school, then, is this: Is the expression of a given process, principle, or large idea representative, is it typical, and is the admission of this particular typical expression necessary to the full understanding and command of the process, principle, or ideal in question? To impose this test with a heavy hand upon the subject-matter of instruction would be to make large use of types, and to confine our attention to rich topics.

Because a given set of facts is well adapted to the presen-

tation of a process or principle, and because a given expression is typical, is no final reason why it should be included in a given study. So limited is the elementary school period, so immature is the child, so pressing are the needs of present-day living, and so abundant are the larger teachings of the different school branches, when taken together, that there is need of selecting with care, from the processes, principles, and ideals available, those to be included within the studies of the elementary school.

It is in supplying the basis of this selection that the claim imposed by national life enters, in a third way, to determine the elementary course of study. For the final basis of selection is to be found in what it is essential that the child should know and should be able to accomplish in order to participate in each phase of our social life and do his part.

The final test to be imposed upon the materials of elementary instruction is therefore this: Is a knowledge and command of this process, principle, interpretative idea, or ideal essential to the preservation, in their fundamental features, of one or more phases of our national life, or, put in other words, essential to prepare the child to make a living under present economic conditions; essential to prepare him to fulfill the obligations of the parent and to perform the duties of the citizen; or essential to prepare him for a rich personal life and a life of rectitude in our social order? Though this test ignores studies as sciences, and all claims of knowledge for the sake of knowledge, it recognizes that we are an industrial and commercial people and that the work the boys and girls now in our elementary schools will find to do will be in the lines of industry and trade; it recognizes also that there are domestic duties to

be performed, complex problems in national, state, and municipal government to be solved, and that there are vital moral issues to be met both in the life of the individual and of the nation.

The determination, in view of this test, of the processes, principles, ideals, or large topics to be included in the studies of our elementary school, sheds further light upon the character of these branches. The language taught must be the English language; the literature read and studied must, to a large extent, be American literature; the penmanship taught cannot be the writing of Greek, or Hebrew, or Chinese — it must be the writing of English. Arithmetic must consist in the application of number to business operations and industrial activities as we know and practice them. History cannot be general history, but the history of the United States; geography must be confined primarily to our national domain, and so with all other branches. In a word, the studies of our elementary school must be intensely American, that is, the materials or topics included must embody those ideals and that knowledge of means essential to making a living and to living well in our democracy.

The admission of a topic into a study of the elementary curriculum does not, however, fix what is to be taught through it, or how the truth taught is to be applied; in a word, it does not fix the use to be made of it. Take, for example, Lowell's "Longing." As a theme in reading, it may be used as a formal exercise in oral expression, or to give knowledge of Lowell as a poet, or as a means of teaching the value and influence upon life of noble thoughts and ideals. But which of these is the proper use can only be determined in view of the claim rested by social life in its

entirety upon the elementary school. Likewise, no topic carries within itself the determination of its relative place within a study. As arithmetical themes, there is nothing in interest or cube root to tell which is of the greater relative worth. This can be decided alone from without and more especially in view of the relation of the given topic to the fulfillment of the aim of elementary education. In short, it is the claim made by the phases of national life upon the curriculum of the elementary school that serves as the basis for determining the final use or application to be made of a topic and affixing its relative importance in a given subject of the elementary course of study.

That the studies of the elementary school curriculum are not of equal worth is generally recognized. The grounds of this conclusion are, however, not to be found in the subjects themselves, nor in the above claim alone, but more especially in the relative importance, in the life of a given social whole, of the phase or phases thereof, the needs and demands of which are met by a given study.

Without entering into the implied argument, and proceeding upon the principle that self-preservation is the first law of social as well as of individual life, the relative value of the phases of society is about as follows: As phases of first importance are the industrial and the social, of second importance is the moral-religious, and of third, the intellectual and artistic.

If such a distribution of values is accepted, those studies which contribute directly or indirectly to the preservation of the industrial and social phases are of first importance, those ministering to the preservation of the moral-religious of second importance, and those fostering the continuation of the intellectual and artistic of third importance.

To summarize, the life of a given society or nation as a whole, by virtue of the claim it imposes, enters into the determination of the curriculum of the elementary school in that the needs and demands of the different phases of national life are the *final* factor in conditioning the range of studies, in conditioning the particular branches admitted, and the relative value assigned them; it also enters in as the *final* factor in conditioning the materials or topics to be included within each study, in conditioning the relative place of a topic within a particular branch, and the use to be made of the given topic.

2. *Determination by Given Community or Local Conditions.* — A given community is a city, village, or rural settlement which forms an integral part of a larger social whole. As such, a given community is not a part of the social whole, like the spoke is of a wheel, the roof, of a house, the leaf, of a tree. It is rather an expression of the fundamental features of the life of the larger social order of which it is a part; it may be at the same time an expression of some one or more of these features in a particular form, and this special manifestation may differentiate the given community from all others. For example, Chicago, as a particular community, is a reproduction of the fundamental features of American life; particular emphasis is, however, given to certain aspects, and Chicago is famous for business. Boston likewise reproduces our national life, but there the cultural element finds special expression.

The relation between national and local life is, however, a reciprocal one. National life does not exist apart from particular communities, and a given local life is impossible apart from a given nation. To illustrate, our national life has no existence apart from communities like Boston, New

York, Chicago, and in turn social life as found in such communities could not exist apart from our democracy. For the essential features of national life constitute the basic elements in local life, and the particular expression of national life and the emphasis of some aspect of it in the life of respective communities supply the variations essential to the highest national existence.

By reason of the relation between the nation as a whole and separate component communities, if a given society is to be maintained in its fundamental features, and also in its fullness and richness, the basic aspects of each phase of the life of the larger social whole must, on the one hand, find expression in the life of each separate community, and, on the other, the particular manifestations of the larger social life distinctive of each community must be conserved in so far as these expressions are in accord with the general spirit and ends of the given national order.

From the condition of maintaining national life and in view of the aim of elementary education, a given elementary school has a national and a local function, its national and primary function being to provide for the embodiment, in the life of the given community, of the basic features of the different phases of the life of the nation, and its local and secondary function being to provide, in so far as these are in conformity with the general principles of the social whole, for the preservation of the fundamental aspects of the particular expression of national life as manifest in that of the given community.

The dual function of the local elementary school makes two claims upon its curriculum. First and primarily, its course of study must contain those ideals and that knowledge of means essential to embody, in the life of the

given community, the fundamental features of each phase of the life of the nation. Second and secondarily, its course of study must contain those ideals and that knowledge of means essential to the preservation, in their basic aspects, of the particular and approved variations of national life as manifest in the given locality.

The first and primary claim registered against the curriculum of the local elementary school, it will be observed, is but the claim made upon the elementary course of study by society as a whole, formulated with reference to local conditions.

Life in no two communities is exactly alike. Differences in the *personnel* of citizenship exist. The people in one community are American born and bred, in another, they are to a greater or less extent foreigners. The chief industry in one community may be farming, in another, manufacturing, in still another, coal mining. These differences in citizenship and occupation act to modify the expression in a particular community of the basic features of our national life. In one place the morals may be below standard, in another, intelligence, or modes of social intercourse, or artistic taste.

Notwithstanding these differences in community life, local conditions have nothing to do with determining the range of studies or with determining the particular branches admitted into the curriculum of the local schools, in view of the primary claim registered against it. For the range of studies and the branches best adapted to provide for the existence in its general features of the larger social order are at the same time those best adapted to embody, in the life of the given community, the basic elements of the given national life.

The same may be said with respect to the selection of topics within the studies admitted in view of this primary claim. These must be selected alone with regard to the needs of the nation as a whole, and not with reference to those of the given community.

When it comes, however, to determining the relative importance of topics within a subject and to fixing upon the final use of these, this cannot be done alone in view of the needs of the larger social life. For, in the embodiment of the essential characteristics of the life of the nation in that of a given community, local conditions must be taken into consideration. To illustrate, in a settlement where American life is at its best and where the on-coming generation breathes in its spirit from birth, those topics of history and civics shedding light upon the principles and spirit of American institutions need not be given the same importance as in a community composed in large part of foreigners, who are more or less ignorant of American life and its principles. Likewise, in the determination of the final use to be made of a topic, the special need or deficiency in local life, as judged by national standards, must be taken into account. To be sure, the ultimate end to be attained through the study of the given topic is set by the social whole, yet the particular use to be made, the particular application to be given, is conditioned by life as found in the given community. That is, if the elementary school of a given community is to accomplish its aim with reference to the life of the nation, the treatment and use of a topic — say, cleanliness — must necessarily differ in an industrial center, in a crowded tenement section, and in an agricultural district.

Local conditions are also a factor in determining the

relative value of the studies admitted in view of this first claim. For, if the elementary school is to accomplish its primary function, language, history, and civics, for example, must be assigned greater value in a locality containing a large foreign element than in a community composed of native born Americans. Similarly, literature and art must be given a larger place in a locality grossly materialistic than in one highly artistic and spiritual, manual training and drawing must receive greater emphasis in an industrial than in an agricultural centre.

That part of the curriculum of the elementary school determined in view of the first claim imposed upon it, or in view of the needs of national life, may be characterized as the primary portion, and in its determination the life of the given community thus enters in as a secondary factor in conditioning the relative place and the use to be made of the topics included within the different studies and in conditioning the relative value of the several branches. The degree, however, to which even this is true depends upon the extent to which local conditions must be taken into account, if the elementary school of the given community is to fulfill its national or primary function.

On the other hand, in the determination of the course of study of the elementary school in view of the second claim imposed upon it, it is the interests and the needs of the given community that become of first importance. To be sure, no feature of social life can be fostered unless this is in conformity with the general principles and spirit of the nation. Yet within the range of approved manifestations, which of these shall be chosen by a given community to be preserved through the medium of its elementary school is conditioned by what aspects find particular expres-

sion and come to constitute the special interest of the given community. This will vary; with one community it will be agriculture, with another, stock-raising, with another, coal mining, and so on through the range of life's needs and the catalogue of industry, trade, and commerce.

It is in meeting particular local conditions that the elementary school finds its local and secondary aim, and it is in view of the consequent claim upon the elementary course of study that the needs of the given community serve as the basis for the admission of studies, of the selection of topics to be included in these, of fixing the relative place and final use of the topics selected, and of determining the relative value of the subjects admitted. In short, in view of this second claim, the life of the given community becomes the primary factor in determining what may be characterized as the secondary portion of the curriculum of the elementary school.

The extent, however, to which this second claim may be taken into account is conditioned by the primary aim of elementary education, and it is only when the elementary school is in position to fulfill its national function, and then only, that the particular interests of the given community may be taken into account in the determination of the course of study.

§ 5. Determination of the Elementary School Curriculum by the Child

1. *The Adaptation of the Curriculum.* — In view of the last four of the above principles, the child has the following claim upon the curriculum of the elementary school: The curriculum must be so adjusted to the will and to the intellect, during each period of development, as to give to

the intellect a normal form and content, and still a form and content adapted to the free expression of the will and adequate to the exercise of the desired control and direction.

This claim implies, on the one hand, the adjustment of the course of study to the elements of the will and to the mental capacities distinctive of the given period of child life. Opportunity must be given for the normal expression of the will and the free exercise of the intellect, that the child may thereby be stimulated to develop according to his inherited tendencies. On the other hand, this claim implies control and direction, that is, such an adjustment of the course of study that the elements of the will are excited not only to spontaneous expression, but to expression in given ways. For, though the curriculum — in view of one phase of this claim — must follow the instincts and inclinations of the child, it must do this, in view of the other, that their expression may be controlled and directed. This guidance, coming from the way hereditary tendencies are stimulated to find expression in action, is not therefore something imposed from without, but arises from within, and because it comes from within, the child develops normally, yet in desired ways.

In the adaptation of the curriculum there is therefore involved, on the side of the will, a knowledge of the impulses and instincts distinctive of each period of child life, also a knowledge of their normal expression in action and of the expression which must be given to them in view of the desired will development. With respect to materials, there is presupposed not only a knowledge of the ideals and means appropriate to excite the impulses and instincts of the period to expression, but a knowledge of the ideals and means suited to supply the basis for exercising over them the

desired control and direction. On the side of the intellect, there is implied insight into its natural form and content on each level of mental life, and into the form and content that must be given it, also a knowledge of the materials appropriate to foster, in each period, a normal, yet desired development.

To adapt the curriculum to the intellect and to adapt it to the will are, however, not two different things. By reason of the relation between the two, instruction adapted to give, at each period, the normal expression, yet desired determination to the will, is at the same time the instruction suited to give to the intellect its normal, yet needed, form and content.

In the adaptation of the curriculum to the life of the child, there are two signs that may be taken as guides. The immediate one is interest. Interest is a feeling of pleasure on the part of the learner in the information gained; it is, however, more especially a feeling that the given information has worth to the self as the medium of revealing new ideals or of supplying the means of attaining cherished ends. As a feeling of worth and as the immediate sign of adjustment, interest has great value, and its absence on the part of the child at any point may be taken as a signal of danger. Arising as it does out of so adjusting instruction to the will and intellectual life of the period that each is given free expression, interest is at best but a by-product of the educative process. As a by-product, though a valuable one to foster, the excitation of interest should never be confused with the primary purpose of education — will and intellectual development.

Nevertheless, it is at this point that the Herbartians err. Interest is exalted by them into an end, and the aim of

instruction defined as the development of a many-sided interest. Interest, however, instead of being an end, is at best merely a sign that instruction is adapted to the accomplishment of its purpose. Consequently, to exalt interest into an end is to mistake the conditions out of which it arises and to give to it a false place and value in education.

Though interest may be taken as the immediate sign of adjustment, it cannot be regarded as the final one. This is to be found in the acceptance by the child of the new ends or the new means presented, and in the use of these in controlling and directing his activities. Consequently, if the child rejects the ends or ideals presented, or fails to use the new knowledge of means, the given instruction does not meet the needs of his life at the given time, — is not adapted to his needs. Use by the recipient in the expression, control, and direction of life thus becomes the final test of adjustment, and it is therefore action or conduct in the light of or upon the basis of the information imparted that constitutes the ultimate sign of adaptation.

2. *Ways the Child Determines the Curriculum.* — By making the foregoing claims upon the curriculum, the child becomes a factor in determining the form and character of instruction (that is, in conditioning the type of materials that must be included in the course of study, the kind of words in which instruction is clothed, and the way it is presented). To illustrate, toward the age of six and thereabout, owing to the rising force of the intellectual impulse, the child becomes exceedingly inquisitive. Because of his lack of permanent interests and of mental power, he is uninterested in and unable to grasp any systematic presentation of a subject.

Nevertheless, by virtue of his needs and the resulting desire to know, and to act, he delights in fairy tales, legends, and stories. Because these appeal to him and supply materials for the free expression of his impulses and the free exercise of his intellectual capacities, these are suited to his instruction, and some such materials must be used if the child is to be given a normal development at this time. At this age the constructive instinct also appears, and the child finds pleasure in making things. Because of his lack of intelligence and skill, he is unable to understand and to undertake any difficult construction. Yet he appreciates and is able to do simple tasks. Consequently, such exercises must be employed, if the materials of instruction are to appeal to the child and be suited to this aspect and stage of his development. Likewise, in all periods, whether in infancy, childhood, or youth, the psychical needs arising from the impulsive and intellectual life of the child enter in to condition the form and character of the subject-matter to be used and therefore to be included within the curriculum.

It is but a corollary of this to say it is the conditions imposed by the above claim, or the needs of child life at different periods of development, that supply the basis of determining the way in which the materials of instruction are distributed within the different branches and the course of study. For example, there is nothing in literature, as such, which impels the reading of Mother Goose Rhymes or the like before the study of "The Great Stone Face." The necessity arises from the needs and limitations of the learner.

Since the child develops normally only as the impulses of a period are excited to expression and the intellect exer-

cised in a way to give these appropriate control and direction in action, to employ the materials of instruction to this end is the use that must be made of them at the given time. To illustrate — fairy tales, legends, and stories, as a general thing, embody a moral and may be used to teach morals. However, the need of the child, when he is the most interested in these, is not moral instruction, but an opportunity to satisfy his curiosity and to exercise on materials within the range of his appreciation the rising powers of his intellect. To the satisfaction of these psychical needs, fairy tales, legends, and stories must be employed at this time, if they are to be truly educative. The child may, to be sure, discover later that in learning these he was becoming acquainted with a portion of world literature, and he may also discover that in these are embodied many of the principles of individual and social life. Yet bringing the child to the consciousness of this at the time these are particularly appropriate, constitutes no part of their use. Likewise with the earlier constructive exercises. The need of the child, when constructive exercises are most suitable, is activity, and they afford such opportunity; when this is done, they have served their immediate purpose. True, the child may learn later that these exercises were illustrative of the typical industries of life, but to make him conscious of this forms no part of their use in this earliest period of formal education. In like manner throughout all stages of education, the use to be made of the subject-matter of instruction at a given time is conditioned by that which must be made in order to give to the impulsive and intellectual life of the child the development appropriate to the given period.

§ 6. The Determination of the Elementary School Curriculum by Society Versus its Determination by the Child

If we maintain that the needs of national and local life are the *final* factors in the determination of the curriculum of the elementary school with reference to the range of branches, with respect to the particular studies admitted, and to the relative value assigned them, also the *final* factor in conditioning the topics included within each study and in determining the relative importance in a branch and in the final use to be made of a topic, and yet hold that the needs of child life are a factor in conditioning the form and type of materials included, in determining how they shall be distributed, and what use shall be made of them at a given time, it appears as if we had involved ourselves in a contradiction, for the determining of the elementary course of study by society in the ways suggested seems to preclude its determination by the child as indicated, and *vice versa*.

1. *Determining Claims Supplementary.* — From the relation existing between the individual and society, the claims made upon the curriculum of the elementary school by national life and those registered against it by child life cannot be contradictory. Those imposed by the social order represent the end of the educative process — the knowledge of ideals and of means, the habits and skill that will be useful in adult life under the given social conditions; those imposed by the child represent what is necessary to interest him, to excite him to want to act and to know. The latter have to do with what is essential to encourage and foster his development, the former with what is necessary

to control and direct this in view of social ends. The determination of the elementary course of study from the side of society does not, therefore, preclude that from the side of the child, but its determination from both points of view is necessary, as each supplements the other.

2. *Application of Claims Simultaneous.* — From the supplementary character of the claims imposed by society and by the child upon the curriculum of the elementary school, it is apparent that these claims cannot be considered apart and the elementary course of study conditioned with respect to the one and then with respect to the other. It is necessary to keep both in mind and to give due place and weight to each in the determination of its every portion. That is, both the needs of society and of the child must be considered simultaneously in fixing upon its every part. When thus determined, the elementary school curriculum supplies not only the basis for interpreting the life of the child, and the means of fostering his development, but also the means of controlling and directing this in view of the needs of the community and of the nation.

3. *Character of an Elementary School Study.* — From the factors entering in simultaneously and at every point to determine, in the ways indicated, the elementary curriculum, an elementary school study is, as suggested above, different from the given subject as a science. As a school study, a given branch — apart from what it may comprehend as a science — may include only those ideals of life and that knowledge of means most conducive to the appreciation and the living of life under given social conditions, and furthermore, these ideals of life and this knowledge of means must be embodied in such form, clothed in such words, and so distributed as to meet, on the one

hand, the needs of the developing child and to conserve, on the other, the special ends of education. Consequently, to know a subject as a science does not imply that it is known as an elementary school study, since to know it as such presupposes that it is known, as it is conditioned at every point by the supplementary factors entering into the determination of the elementary school curriculum as a whole.

Readings

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Eliot, *Educational Reform*, pp. 253–269.
Chancellor, *Our Schools*, pp. 275–283.
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Davenport, *Education for Efficiency*, pp. 90–120.

CHAPTER VIII

METHODS OF ELEMENTARY SCHOOL INSTRUCTION

1. *Education must seek to lead the child in each period of life to acquire such experience, to direct him in working this over into such knowledge, and to guide him in making such use of this as will give to the will and to the intellect a development appropriate to the period, appropriate to secure a normal will and intellectual development in the succeeding one, and appropriate to secure the will and intellectual development desired.*

2. *In leading the child to acquire an essentially new experience, in directing him in working this over into an essentially new concrete idea or ideas, and in guiding him in the use of this essentially new knowledge, procedure must conform to the movements and characteristics of thought as manifest in the inductive perceptual process of learning.*

3. *In leading the child to acquire an essentially new experience or group of experiences, in directing him in working this over into an individual or essentially new class concept, and in guiding him in the use of this essentially new knowledge, procedure must conform to the movements and characteristics of thought as manifest in the inductive conceptual process of learning.*

4. *In leading the child to acquire a new experience, in directing him in working this over into a new concrete idea or ideas, and in guiding him in the use of this new knowledge, procedure must conform to the movements and characteristics of thought as manifest in the deductive perceptual process of learning.*

5. *In leading the child to acquire a new experience or group of experiences, in directing him in working this over into a*

particular or new class concept, and in guiding him in the use of this new knowledge, procedure must conform to the movements and characteristics of thought as manifest in the deductive conceptual process of learning.

§ 1. The Problem

The curriculum of the elementary school comprises a definite body of knowledge which the child must make his own and use in given ways, if the school is to accomplish its purpose. The acquisition of this knowledge and the making use of it involves on the part of the child the exercise of the learning processes and on the part of the teacher the employment of methods of instruction. Methods of instruction, in view of the above principles, are conditioned by the learning processes. To understand the methods of instruction applicable in elementary education, it is necessary to study these methods as determined by the learning processes active during the elementary school period.

If these methods are designated in terms of the particular conditioning process, they are the inductive perceptual, and inductive conceptual, the deductive perceptual, and deductive conceptual methods of instruction.

§ 2. The Inductive Perceptual Method of Instruction [1]

The inductive perceptual method of instruction rests upon the second of the above principles and arises from

[1] It will add to the ease with which this chapter is understood, if the learning processes and the characteristics and movements of thought within them as treated in Chapters IV and V are reviewed in the proper connection, and if one or more of the corresponding illustrative lessons of Chapter IX are carried as illustrations.

conforming procedure in teaching to the movements and characteristics of thought as manifest in the inductive perceptual process of learning.

1. *The Development of Motive and Statement of Aim.* — Instruction, conforming to the first step of this process, seeks in its corresponding step to bring the child to the consciousness of a need which he will feel constrained to satisfy, and to bring him to appreciate that a given concrete difficulty — the overcoming of which implies on his part the acquisition and use of an essentially new concrete idea or thought whole — stands in the way and must be resolved, if he would satisfy the given need. In short, effort is made to develop a motive for the given process of inductive perceptual learning and to fix the point to be attained through this process.

The motive for this may be developed and the point to be attained through it may be fixed in two ways. First, advantage may be taken of an instinctive need which at the given time is demanding satisfaction. Through giving the child opportunity to gratify this instinctive need, he may be led to find out for himself the difficulty to be overcome, and discovering this for himself, he appreciates to the full the motive for thought and its purpose. This mode of procedure represents the highest type of instruction and is the ideal toward which the teacher should strive. The second mode of procedure is, however, of scarcely less educational importance and does not differ fundamentally from the first. In pursuance of this method, the teacher stimulates the sense of a given need and excites the desire to satisfy it. The child impelled by this is then brought face to face with the thing to be constructed, the problem to be solved, or the question to be answered, and is led to

see that he must accomplish the task presented, if he would gratify his desire.

The means to be employed in this step of inductive perceptual instruction are varied, and may include the use of past experience, well-put questions, short and pointed descriptions, the relating of selected portions of stories, and the use of pictures, objects, and the activities of children.

When a motive has been developed and the purpose of the given process of inductive perceptual learning fixed, the conditions imposed upon teaching by the first thought movement of inductive perceptual learning have been fulfilled. But that children may have a guide in the subsequent steps of thought, and the teacher in the remaining steps of instruction, it is of importance to formulate the end to be attained. It ought to be clear, if the child has been made conscious of a need, made desirous of satisfying it, and brought to appreciate the concrete difficulty to be overcome, that he will be able of himself, as a rule, to state in his own words the aim of the given process of learning or of the given lesson. To be sure, the aim as stated by the child may at times be crude and in some respects wide of the mark, but a few well-put questions will generally suffice to bring it into working form.

As guides to the teacher in directing pupils in stating the aim or in formulating it for them, the Herbartians have suggested certain criteria of a good aim. These are made applicable by them to its formulation at all times. They are, however, when taken as a whole, more particularly applicable to primary instruction. These criteria are as follows: the aim must be concrete, that is, stated with reference to a particular difficulty, — a given problem, or story; it must be definite, that is, make clear the point to

be solved, the end to be attained; and it must be brief and attractive, brevity adding to definiteness, and attractiveness increasing interest in the intellectual task in hand.

In view of the work of this step, there is implied, on the part of the teacher in doing it, a knowledge of the present instinctive needs of the child, a knowledge of the means to be employed and of how to use them in the excitation of a particular need, also a knowledge of the difficulty to be overcome and of the essentially new concrete idea or thought-whole that must be acquired and used by the child, if he is to satisfy the need excited.

2. *Step of Recall.* — The next step in inductive perceptual instruction does not grow out of a movement of thought explicitly manifest in inductive perceptual learning, but out of one implicit therein. It is so-called essentially new experience that is given meaning and value through this process. An essentially new experience includes, as we have seen, old elements, and in so far as it contains these, it is worked over into knowledge through the deductive perceptual process of learning or in the light of concrete ideas previously attained. In conforming teaching to the movements and characteristics of thought as manifest in inductive perceptual learning, account must be taken of this implied operation of deductive perceptual thought, and place made for bringing to mind those concrete ideas involved in giving meaning and value to the essentially new experience in question or involved in the acquisition of the essentially new concrete idea or picture-whole sought. To make provision for and to do this is the work of the second step of inductive perceptual instruction.

The following suggestions will be found helpful: Those concrete ideas or picture-wholes and those only are to be

brought to mind which will enable the child to give significance, with economy, to the given essentially new experience or to attain readily the essentially new concrete information desired. Since the purpose of this step is to prepare the child's mind for the acquisition of an essentially new concrete idea or idea-whole, it follows that no new instruction should be given in it.

The particular methods applicable to the recall of the desired old concrete ideas vary with the conditions. This may be done at times through directed narration or description on the part of the children, at other times through the use of questions, and at still others through well-pointed reviews.

By virtue of what is to be accomplished, there is implied on the part of the teacher, a knowledge of the past experiences of the child, an analysis of the essentially new idea-whole to be gained with respect to the old ideas included therein, the fixing in mind of the old concrete or picture ideas to be brought to the child's mind, and a knowledge of the particular means to be used and of how to employ them in doing this.

3. *Step of Presentation.* — The third step of inductive perceptual instruction has its basis in that movement of inductive perceptual learning characterized as the acquisition of data. In conformity thereto, the teacher seeks to bring to the child the essentially new experiences to be given meaning and value, or to supply him with the sense materials implied in gaining the essentially new concrete idea or ideas sought. Just what sense impressions are to be brought to the child is determined, of course, by the difficulty to be overcome, by the situation to be met, by the information desired, or by the aim or purpose of the

given process of inductive perceptual learning which the teacher is seeking to induce and to carry to completion in the particular lesson.

Various particular methods of presentation are employed. The first and most important are the direct ones of observation and of experimentation, that is, imparting experience through leading the child to observe the construction, object, phenomenon, invention, product, process, person, or event in question, or through directing him in the performance of given measurements and operations. These particular methods are especially applicable in elementary school science, geography, hand-work, and arithmetic, and ought to be given the widest usage. Among indirect methods are to be included the use of pictures, models, maps, globes, and other representative materials, also narration, which may be employed in the presentation of myths, fables, legends, and stories; likewise description, to be used more especially in the earliest work in history and geography; and to these are to be added the book-method, that is, the use of books by the pupil as a means of obtaining facts.

As guides in the use of both direct and indirect methods, the teacher should settle upon the sense qualities, aspects, or characteristics of the object, construction, or process to be observed, or upon the measurements to be performed and the data to be collected, or he should determine the points to be made through narration or description, or the facts to be gained by the child through study. He should also formulate the pivotal questions to be employed in directing study, observation, or experimentation. There is implied too, on his part, an orderly arrangement of materials and their presentation in the light of related past

experiences; it is well also to make provision for frequent summaries of the qualities observed, points made, or of the facts presented.

4. *Step of Elaboration.* — With the necessary sense qualities or data presented and made real, instruction, conforming to the inductive perceptual process of learning, seeks to lead the child to separate from the given qualities or facts those of special importance, seeks to render his impressions of these more vivid, and to bring him to appreciate their meaning and value in the given connection. This may be done, on the one hand, through leading him to analyze the given data, through directing him in his search for casual likenesses and differences between the materials in question and the old ideas brought to mind, and through guiding him in giving significance to the former in view of recognized similarity to the latter; it may be done, on the other hand, through leading him to reflect upon the significance of those elements, the meaning and value of which cannot be determined in the light of the past experiences recalled.

In the selection of the sense materials, the meaning and value of which are to be emphasized, the teacher may be guided partially by what it is necessary to select in order to bring the children to a mature appreciation of the given construction, object, or process of nature, or of the given myth, story, picture, or problem; he must be guided, however, more especially by the particular needs and interests of the child at the given time, or by the special aim of the given lesson. In bringing out the meaning and value of the selected matter, in so far as this may be done most readily upon the basis of the old concrete ideas brought to mind, the child should be led to note those casual like-

nesses and differences most helpful in the transfer of the meaning and value attached to the past experiences recalled; but to emphasize the fact that the likenesses and differences observed are essential comprises no part of inductive perceptual instruction. The same is true of those phases of significance brought out through constructive and creative thought. It is not the general elements of meaning and value that are to be developed, but those that will enable the child to appreciate in a concrete way the given construction, object, or story, or will enable him to attain the desired essentially new concrete thought-whole.

The particular method of this step is that of the question and answer. For it is through the use of the thought-provoking, problem-setting question that the child's attention may be concentrated upon the desired quality or fact, that he may be led to make the desired comparisons, and to relate the experience under consideration to a similar past experience; it is likewise through the use of such questions that the problem may be set, the solution of which brings the child to the desired essentially new phases of meaning and value.

Before undertaking the work of this step, the teacher should fix upon the elements of data the significance of which is to be especially emphasized, and should formulate the pivotal questions to be used in concentrating attention upon these parts. In so far as the given materials may be given meaning and value in view of casual similarity to past experiences or old concrete ideas, the teacher should decide on the comparisons to be made and upon the pivotal questions to be employed in suggesting and directing these comparisons; and in so far as its significance must be developed through leading the child to creative thought, the

teacher should fix in mind the aspects of meaning and value to be brought out, and should formulate the problem-setting questions to be used in initiating and directing the necessary processes of reflection and inductive perceptual judgment.

5. *Step of Synthesis and Inference.* — With clear, vivid images of the more important sense qualities or facts presented in connection with a given construction, object, or story impressed upon the mind of the child, and with the particular significance of these determined, instruction, in conformity to perceptual inductive learning, seeks to lead the child to create out of his images and separate impressions of the different aspects of a given object, a concrete idea of it in its entirety, or seeks to lead him to fuse his separate insights into the ways of meeting this and that part of a difficulty into a comprehensive concrete idea of how to meet it as a whole, or seeks to lead him to forge into a concrete thought-whole his impressions of the different facts or scenes of the given myth or story. In short, what was presented as material of thought in the step of presentation, worked over in that of elaboration, is given further meaning and value in this step, and the child attains thereby the essentially new concrete idea or ideas, the attainment of which has given purpose and point to the given process of inductive perceptual learning.

The particular methods to be employed vary with the nature of the materials under consideration. Among the more important are to be included narration, description, and explanation on the part of the child. These find a wide range of application in nature study, primary number work, beginning reading, history, home geography, and hand-work, for on the whole there is no better way of

bringing the child to unify his thoughts than to require him to describe the construction or object studied, to narrate the myth, fable, or story presented, or to explain how to meet a given difficulty, to make a given thing, to solve a given problem. It is upon these methods that the teacher must in the main depend, though others may be employed with good effect; such, for example, as drawing, moulding, and dramatic representation.

As a basis of this work, the teacher must analyze into its constituent elements the concrete idea or idea-whole, to which he is endeavoring to lead the child, and make sure that the child brings into the essentially new mental whole, which is in process of formation, those thought elements necessary to the acquisition of the desired insight or information.

6. *Step of Verification and Use.*— In possession of the essentially new concrete idea or ideas desired, there remains, if instruction is to conform to the final movement of inductive perceptual thought, the guidance of the child in using the essentially new insight in the satisfaction of the need initiating the given process of perceptual induction. The inciting need is often satisfied through the acquisition of the essentially new information, but when not, opportunity must be given for its use to this end; and it is the direction of the child in thus using his essentially new knowledge that constitutes the work of inductive perceptual instruction in its final step.

The form that application takes and the particular methods applicable depend upon the need to be satisfied. If the motive for learning a myth is that a picture may be understood, opportunity should be afforded to employ the knowledge gained in its study and appreciation. If the

motive for reading a story is that it may be dramatized, when mastered, the children should be guided in its representation. If it is to solve a given problem, in possession of the requisite insights, the child should be directed in its solution, and the application of the new knowledge may be broadened to apply to other similar problems. If it is that a given thing may be done or a given thing made, with the necessary knowledge of ends and means in hand, opportunity should be given for doing or making the given thing. As suggested, the child is not left to himself in this step, but sufficient guidance is given, mainly through the use of the directive, problem-setting question, to enable him to use in the best way the information acquired. It is in thus directing the child in the application of knowledge that thought arising from need finds its completion in the satisfaction of need, or arising because of the necessity of action fulfills its function in supplying the basis of action.

§ 3. The Inductive Conceptual Method of Instruction

The inductive conceptual method of instruction rests upon the third of the above principles and arises from conforming procedure in teaching to the movements and characteristics of thought as manifest in the inductive conceptual process of learning.

1. *Step of Development of Motive and Statement of Aim.* — Instruction that conforms to the inductive conceptual mode of learning seeks, first, to stimulate a need, which in turn will give rise to a motive for carrying through such a learning process. The motive for this arises when the child finds that, to satisfy a given desire, he must resolve an opposing difficulty which can be overcome only through

the acquisition and application of an essentially new general idea. For it is this discovery that reveals the necessity and purpose of thought. The excitation of such a need, the bringing of the child face to face with such a difficulty, and the fixing of the point of a given process of inductive conceptual learning is therefore the work of the first step of conceptual instruction.

The particular methods applicable are similar to those to be used in the corresponding step of inductive perceptual instruction. Advantage may be taken of a need in the consciousness of the child or a need may be excited, and through giving him opportunity to satisfy it, he may find for himself or be led to discover the difficulty to be overcome or the situation to be met.

The means that may be employed include the use of past experience, the discussion of certain conditions of life and of how they are met, the setting of a problem of how given things are made, or the putting of questions with respect to the reason or cause of this or that.

As in inductive perceptual instruction, it is important, both for the sake of the pupil and the teacher, to formulate the object of the given process of inductive conceptual learning on the part of the child and of the given instruction on the part of the teacher. In many cases the pupil will, at least with a minimum amount of guidance, be able to formulate the aim for himself, yet it is necessary at times to do this for him.

The guides suggested in connection with the step of inductive perceptual instruction are applicable here. There is, however, one exception. An essential characteristic of the aim, as there given, was, that it be concrete; concreteness is no longer an essential feature. In an inductive

conceptual lesson, the aim may be abstract and it is often preferable so to put it.

In view of what is to be accomplished, there is implied with respect to the teacher a knowledge of the needs of the child at the given time, also insight into the means to be employed and how to use them in the excitation of a particular desire; there is implied also a knowledge of the mental or physical obstacle standing in the way, and of the essentially new general idea that must be acquired and used in resolving the opposing difficulty, if the given need is to be gratified.

2. *Step of Recall.* — It is an essentially new experience or group of experiences that is worked over into knowledge through the inductive conceptual process of learning. Such an experience or group of experiences contains, as we have seen, elements that have previously been given general significance, and in so far as an essentially new experience or group of experiences contains old and familiar elements, it is given general meaning and value in view of old elements or through the corresponding deductive process. That instruction may conform to inductive conceptual learning, provision must be made for this implicit operation therein of deductive conceptual learning, and it is the necessity of making such provision that gives rise to the second step in inductive conceptual instruction.

Such provision can be made through providing for the recall of experiences previously given general meaning and value, or for the recall of old general ideas. The general ideas to be brought to mind will depend in each case on those involved in the ready acquisition of the individual concept or the essentially new class concept sought. Since the object of this step is to provide for the use of old

general ideas or for the implicit operation in this process of learning of the corresponding deductive process, it follows that no new instruction should be given in it.

The particular method to be employed varies with the problem to be solved or the question to be answered. Although conversation, narration, and description may at times be used to good advantage, the desired old general ideas may be recalled best, on the whole, through well-directed book reviews and the use of well-pointed questions.

In view of the work in hand, there is implied, on the part of the teacher, a knowledge of the past experiences of the child and of what old general ideas are included in the essentially new concept to be attained; and there is implied in addition the fixing upon which of these ideas shall be brought to mind and upon the means to be used in doing it.

3. *Step of Presentation.* — In conformity with inductive conceptual learning, instruction, in its next step, seeks to guide the child in the acquisition of the requisite experience, or seeks to present to him the sense materials implied in the attainment of the desired individual or essentially new class concept. The data to be presented here differ radically from those to be supplied in inductive perceptual instruction. The difference is brought to view, if the same object is made the subject of an inductive perceptual and of an inductive conceptual lesson. If the subject of a lesson of the former kind is Niagara Falls, adequate sense materials are presented to give the child a concrete idea-whole of it. If Niagara is made the subject of one of the latter type and the aim of the given lesson is to develop an individual concept, then the data supplied must not only be such as to afford the means of obtaining a concrete idea of Niagara, but also such as will serve as the basis of attaining the

desired insight into its distinctive features. It is these latter elements that are rightly ignored in inductive perceptual instruction, and though the sense materials presented therein are often sufficient to supply the means of gaining an individual concept, to use them to this end forms no part of inductive perceptual instruction. The difference is still further emphasized, if the object of a given inductive conceptual lesson is to develop an essentially new class concept. In this case it is necessary to supply data not only with reference to one waterfall, for example, Niagara, but with reference to several, and there is need of presenting sufficient sense materials with respect to each to afford the basis not only of acquiring a concrete idea thereof, but also of gaining insight into the common and essential characteristics of waterfalls as a class.

The particular methods to be employed in the presentation of the selected data and in making these real vary with the sense materials in question. When possible, they should be presented through the direct means of observation and experimentation; where this is impossible, use should be made of pictures, models, maps, etc. There is wide range here also for the employment of books when the facts are not otherwise accessible, as well as for the use of narration and description by the teacher.

The following may be taken as guides: Those sense materials and only those should be brought to the child that are essential to the attainment of the desired individual or essentially new class concept. Preparatory to this, the teacher should fix upon the data to be supplied in the given lesson and should decide upon the particular methods to be employed. The facts should be so ordered as to facilitate their acquisition, presented in the light of past experience

or old general ideas recalled, and in a manner to result in clear, distinct, and vivid images; provision should also be made for frequent summaries.

4. *Step of Elaboration.* — With the necessary sense materials in hand, instruction, in conformity to conceptual induction, seeks to lead the child to work these over with a view to bringing out certain general aspects of meaning and value. To illustrate, if the purpose of an inductive conceptual lesson is to develop an individual concept of Niagara Falls, instruction, in this step, guides the child in analyzing the data presented into their component parts, in comparing the elements discovered with similar ones found in other waterfalls or in connection with the experiences recalled, and leads him to reflect and to pass judgment upon what Niagara is with a given element and what it would be without that element. In this way the child comes to appreciate one by one the distinct and characteristic aspects of Niagara and to apprehend their respective significance. If, on the other hand, the object of the lesson is to develop an essentially new class concept, the teacher guides the child in analyzing the data presented with reference to each waterfall and leads him, through comparison, creative thought, and inductive conceptual judgment to an appreciation of the common and essential elements thereof and of their respective general meaning and value in the cases under consideration.

The difference between the work of this step in inductive perceptual and in inductive conceptual instruction is readily apparent. In the former, the teacher seeks to bring the child to a clear, distinct, and vivid image, and to a simple, concrete appreciation of each of the more important factors in the materials presented in connection with the con-

struction, object, problem, myth, poem, or event in question. In the latter, he seeks to bring him to an understanding of the several distinctive aspects of a given particular and of their respective significance, or to a comprehension of this and that element as common and essential in given typical individuals.

There is but one method on the whole applicable here — that of the question and answer; it is upon directive, problem-setting questions that the teacher must rely in leading the child to make the desired analyses and comparisons, to do the desired reflective thinking, and to pass the desired inductive conceptual judgments.

In doing the work of this step, there is implied, on the one hand, that the teacher decide upon the characteristic features of the particular of which an individual concept is to be given, or upon the common and essential elements of the typical individuals of which an essentially new class concept is sought; and there is implied, on the other hand, that he formulate the larger, directive, problem-setting questions to be used in leading the child to make the analyses and comparisons and to do the reflective thinking involved in the appreciation of this or that aspect of a given individual as distinctive, or in the comprehension of this or that element as common and essential in the particular cases in hand.

5. *Step of Synthesis and Inference.* — With the sense materials presented and elaborated, instruction, in conformity with the inductive conceptual learning, endeavors, where an individual concept is sought, to lead the child to fuse his separate ideas of the distinctive aspects of the individual in question into a comprehensive and vivid thought-whole and upon the basis thereof to draw appro-

priate inferences with respect to the given particular; this is true whether the individual concept desired is of a construction, of an event in history, or of a selection in literature. In case of an essentially new class notion, the teacher leads the child to draw his several ideas of the different common and essential characteristics found in a group of individuals into an idea-whole, and through generalization on the basis thereof to gain a conception of the class; this should be done whether the general idea sought is of phenomena of nature, facts of geography, or problems in arithmetic. The work of this step does not consist, however, in guiding the child in putting together, as one might gather together a number of scattered bricks, the insights and appreciations acquired, but consists more especially in leading him to create out of these an essentially new general idea.

In stimulating the child to the constructive and creative thought implied in synthesis and inference, the chief means to be used is again the directive, problem-setting question. Summarizing, explanation, narration, and description on the part of the child find also a wide range of application.

To do the work of this step, the teacher must have in mind the thought elements to be fused and the inferences to be drawn; he must know, too, the particular methods to be used and how to employ them in guiding the child to the desired phases of general meaning and value, to their synthesis into the desired concept, and to the desired conclusions; finally, it is well to let the child first state the new generalization in his own words, even though this may need correction and it may be advisable later to give him a textbook or classic statement for the same.

6. *Step of Verification and Use.* — With the child in possession of the new individual or essentially new class concept, instruction, conforming to inductive conceptual learning, gives opportunity — when the process does not culminate with the attainment of the essentially new conception — to use this in the satisfaction of the initiating need, and it is making place for this that is distinctive of the final step of inductive conceptual instruction.

The work here, however, is broader than merely giving the pupil opportunity to use the given general idea to gratify the need that yields the motive for the acquisition of the given idea; it includes, in addition, whether the essentially new general idea gained be a law of physics, a rule in arithmetic, a principle, or an ideal of action, the bringing of the child to an appreciation of the various realms to which the given general idea is applicable, and especially to an appreciation of how to apply it to the ordinary and actual problems and conditions of present-day life.

Though the means to be used is, as a rule, the directive question, the form that application assumes and the particular methods to be employed vary with the general idea and with the need to be satisfied. If, for example, the motive for learning a principle of physics is that a given thing may be constructed, application consists in directing the child in the use of the principle to that end, or if the motive for mastering a given rule is to solve a class of problems, the child should be guided in applying the rule to their solution, or if the motive for obtaining an essentially new conception is that certain phenomena, facts, or events may be understood, application consists in helping him to explain them in the light of it. It is in

thus directing the child in the use of the essentially new general ideas acquired that the circuit of inductive conceptual thought is completed and knowledge made to serve its function in life.

Preparatory to this work, the teacher should fix upon the particular methods and means to be employed in aiding the child in overcoming the difficulty, in meeting the situation, in solving the problem, that called for the acquisition of the given general idea; he should also decide upon the other ways in which it is desirable, at the time, to make application of the given general idea and upon the means to be used. As a guiding thought for the step as a whole, the child should be led to apply his knowledge in such ways as will be most helpful in every-day life.

§ 4. The Deductive Perceptual Method of Instruction

The deductive perceptual method of instruction rests upon the fourth of the above principles and arises from conforming procedure in teaching to the movements and characteristics of thought as manifest in the deductive perceptual process of learning.

1. *Step of Development of Motive and Statement of Aim.* — In conformity to this learning process, instruction first seeks to excite a need which may be most readily satisfied through the application of a previously acquired concrete idea or idea whole; it seeks also, through bringing the child face to face with the opposing mental or physical difficulty, to stimulate a motive for and to make clear the object of the process of deductive perceptual learning involved in resolving the given obstacle and in gratifying

the given inciting need. The doing of this characterizes the first step of deductive perceptual instruction.[1]

2. *Step of Presentation.* — The appreciation of a difficulty or problem implies some little knowledge of the situation or condition out of which it arises. It does not, however, presuppose insight sufficient to enable one to overcome or resolve the obstacle, even though this may be done in view of concrete ideas previously acquired. The doing of this necessitates the collection of additional sense materials, and their acquisition marks a distinct movement in deductive perceptual thought. In conformity thereto, deductive perceptual instruction endeavors, in its second step, to supply, or to lead the child to acquire by himself, the data requisite to the accomplishment of the mental task in hand, and to make his impressions of the data acquired or presented real and life-like.

The materials to be presented in the two methods of perceptual instruction are somewhat different. In the inductive, it is necessary to supply such data as will enable the child to attain an essentially new concrete idea or thought-whole; in the deductive, there is only need of presenting such sense materials as will enable him to recognize readily the similarity or difference between the given situation, object, or construction and one previously met, determined, or constructed, or will enable him to

[1] As a rule, the methods and guides suggested in our consideration of inductive instruction are, with slight modification, applicable to the corresponding step and method of deductive instruction. For this reason, these will not be repeated. It will, however, be found of profit, in connection with the study of each step of deductive perceptual and conceptual instruction, to have the student review the methods and guides for the same step of the corresponding method of inductive instruction, and to consider what changes are necessary to make these applicable to the step in question.

recognize the similarity or difference between the given experience and one previously worked over into a concrete idea.

3. *Step of Recall.* — The sense materials presented do not of themselves reveal their meaning and value or always suggest the experience or old concrete ideas upon the basis of which this may be most readily determined. Hence the teacher seeks to lead the child to recall those concrete ideas which will be most helpful to him in acquiring the desired concrete insight. As a rule, it is sufficient to bring to the child's mind the concrete idea or ideas gained in giving meaning and value to a single experience, and there is seldom need, as is often the case in this step of inductive perceptual instruction, to recall various experiences or parts of different ones.

4. *Step of Elaboration.* — With the necessary data presented and the helpful concrete ideas recalled, instruction, in conformity to the deductive perceptual process of learning, leads the child to analyze into their elements, on the one hand, the sense materials in question and, on the other, the past experience or concrete ideas brought to mind; directs him in comparing, in order to find casual likenesses and differences, the elements found in the one with those included within the other; brings him, through creative thought and deductive perceptual judgment, to a distinct and vivid appreciation of the respective casual likenesses and differences existing between the two experiences, and leads him in view of differences to withhold and in view of likenesses to transfer concrete meaning and value to particular elements of the experience in question. Though the work of this step is similar to that in the corresponding one of inductive instruc-

tion, there is lacking, to a large extent, as will be noted, the constructive feature characteristic, at this point, of the latter.

5. *Step of Synthesis and Inference.* — With separate and vivid ideas of the different elements of the data under consideration, and with their respective significance or lack of significance clearly in mind, the teacher, in conformity to the deductive perceptual process of learning, leads the child to fuse the separate impressions into an idea-whole, and on the basis thereof to draw inferences or conclusions. He leads him, for example, to infer, in view of the new concrete insight gained, that the given problem may or may not be solved in a given way, or to infer how the given construction may be or was made, or to ascribe to the objects in question certain qualities having a given significance.

The outcome of this step in each of the two methods of perceptual instruction will be different. In the inductive, an essentially new concrete idea or idea-whole is brought to the child. In the deductive, though the child gains a new concrete idea, the new idea is very similar to concrete ideas previously acquired. In the one case, a distinct contribution is made to the child's insights, in the other, old knowledge is slightly expanded and given a new form.

6. *Step of Verification and Use.* — With the attainment of the desired insight, or new concrete ideas, the need yielding the motive for carrying on the given process of perceptual deduction is often satisfied. There more generally remains, however, the overcoming of the physical or mental obstacle standing in the way of the gratification of the inciting need. To give the child opportunity for this and to direct him in it is to bring instruction into conformity

with the final thought movement of deductive perceptual learning, and it is the doing of this that is distinctive of the final step and work of deductive perceptual instruction.

§ 5. The Deductive Conceptual Method of Instruction

The deductive conceptual method of instruction rests upon the fifth of the above principles and arises from conforming procedure in teaching to the movements and characteristics of thought as manifest in the deductive conceptual process of learning.

1. *The Development of Motive and Statement of Aim.* — Instruction, in conformity to this process, seeks in its first step to excite a need which the child will feel constrained to satisfy and to bring him face to face with an opposing difficulty which may be resolved through the use of a general idea or general ideas previously acquired. The excitation of such a need gives rise to the desire to satisfy it, and the appreciation that this involves overcoming the given difficulty yields the motive for carrying through the implied process of deductive conceptual learning and fixes its point and purpose.

It is well to note, in this connection, that the aim of a deductive conceptual process of learning on the part of the child and of the corresponding process of instruction on the part of the teacher may be stated in particular and concrete, or in general and abstract terms, according as there is need of acquiring or developing a particular or a new class concept. If the problem at issue or the aim of the lesson has to do, for example, with the agricultural conditions of eastern North Dakota, it may be stated concretely: Is eastern North Dakota suited to

farming? The question may then be answered through the attainment of a particular concept. If, however, the problem or aim of the lesson has to do with the general characteristics of, say, the substantive clause, it must be stated in general terms: What is a substantive clause and what are its uses? The answer implies the acquisition of a new class concept.

2. *Step of Presentation.* — With the motive developed and the object of the learning process determined, deductive conceptual instruction, in its next step, supplies or directs the child in obtaining the data or the facts with reference to the problem in question necessary to its solution. The materials of knowledge to be acquired or presented will vary according as a particular or new class concept is sought. In case of the former, there is need only of presenting data with reference to a given particular; the data presented must, however, be of such a character as not only to enable the child to gain a concrete idea-whole of the given particular, but also such as will enable him to appreciate the presence therein of certain familiar elements of general meaning and value. If, however, there is need of acquiring a new class concept, data must be presented with reference to a number of similar particulars, and these must be of a type to enable the child to come to the appreciation of certain known elements of general meaning and value as common to the group in review.

The materials to be brought to the child in this step of deductive conceptual instruction are similar to those to be presented in the corresponding step and process of inductive instruction. There is, however, this difference: In inductive conceptual instruction, the facts presented with reference to a given particular or with reference to

a group must be of a kind to enable the child to learn for the first time that certain elements are distinctive of a given particular, or are common and essential to a class. In deductive conceptual instruction, the materials to be presented need only to be such as to enable the child to discover in the object, situation, or problem at issue, certain elements of general meaning and value with which he is familiar, or such as to enable him to note that certain known elements of general meaning and value are common to the group in question. In the one case provision must be made for learning from the ground up, in the other, for learning in view of general ideas previously acquired.

3. *Step of Recall.* — With the necessary facts in hand, deductive conceptual instruction seeks to supply the basis for giving these general meaning and value in the most economical way. The basis of this is not, as in deductive perceptual instruction, a concrete idea or idea-whole, but general ideas, and the general idea or ideas to be brought to mind are, as a rule, not particular or individual concepts, but class concepts.

4. *Step of Elaboration.* — Although the child may have gathered data with reference to a given problem, object, or situation, or with reference to a group of similar particulars, and his impressions of these may be vivid, and although he may have recalled a given concept or a number of general ideas, the full significance of the respective materials remains relatively unknown to him. That the child may attain with ease the insights implied in the accomplishment of the task in hand, instruction, in conformity with the deductive conceptual process of learning, guides him, on the one hand, in analyzing the data acquired with reference to the given particular or with reference to

the given group, — not, however, merely for the sake of making clear and distinct the images of the different constituent factors, but more especially that the general elements embodied in the given particular or common to the given group may be discovered, — and it guides him, on the other hand, in analyzing into its component parts the general idea or ideas brought to mind. It also leads him, in case a particular concept is desired, to compare the elements found in the given particular with those included in a given concept, brings him through creative thought and deductive conceptual judgment to appreciate the essential likenesses or differences between the elements finding expression in the particular in question and those comprised in the concept recalled, and leads him to withhold in view of differences or transfer in view of similarity general meaning and value to particular elements of the experience under consideration. Similarly, in case a new class concept is sought, the teacher guides him through the same thought processes to discover the essential similarities or differences between the elements common to the group of particulars in review and the elements included within a given general idea or ideas, and leads him to withhold or to transfer general meaning and value to given elements in view of essential likenesses or differences.

Though the work in this step is much like that in the corresponding step and process of inductive instruction, there is this difference: In the latter process, the child is being led to appreciate for the first time that certain features are distinctive of a given particular, or that certain elements are common and essential to a given group, whereas in the former, the child is merely being led to observe the presence or absence of certain well-known

general elements in a given object, situation, or problem, or in a given group or class of phenomena, and to a consequent withholding or transfer of general significance. There is therefore lacking in this step of deductive conceptual instruction that creative element distinctive of the corresponding step and process of inductive instruction.

5. *Step of Synthesis and Inference.* — With the more important elements in the facts presented with reference to a particular or group of similar particulars made distinct, and with the general significance of these elements or the lack of it made clear, the child is directed — in case the essential similarities or differences between a given particular and a given general idea have been brought to view — in bringing together into a particular concept the general insights gained, and in drawing appropriate inferences with reference to the particular in question. If, on the other hand, the essential similarities or differences between the common elements of a group of phenomena and the elements comprised in the given general idea or ideas have been made clear, the child is led to fuse into a new class concept the different insights into general meaning and value thus acquired, and upon the basis of this new class concept is guided in drawing inferences with reference to the objects, processes, or problems in review.

The contrast at this point between the two modes of conceptual instruction is marked. In inductive conceptual instruction the child is brought in this step to an idea of the distinctive qualities of a given particular, or to an idea of the common and essential qualities of a class, whereas in the corresponding step of deductive conceptual instruction he gains a particular concept which enables

him to appreciate the embodiment in a given particular of certain known general elements, or he gains a new class concept which enables him to understand how the general idea or ideas previously acquired may be applied with slight modification to a new group of particulars. In the one case, he acquires essentially new insights; in the other, old knowledge receives modification and expansion.

6. *Step of Verification and Use.* — Deductive conceptual instruction may culminate with the information gained through synthesis and inference, but as a rule place must be made for overcoming the mental or physical difficulty which stands in the way of satisfying the need that gave rise to the particular process of deductive conceptual learning. Giving opportunity to apply the knowledge gained to this end characterizes the final step of this method of instruction.

The work of this step does not, however, consist alone in guiding the child in solving the problem, meeting the situation, or determining the object calling forth the given learning process. It may and more often does include leading him to see that there are other particular expressions of the same general elements, or that the new class concept may with slight expansion be applied to still other groups of phenomena, processes, problems, or situations. Though the particulars or classes to which such application is made are different each from the other, they must of course in the last analysis be essentially similar. Deductive conceptual instruction in its final step thus takes somewhat the form of the corresponding process of inductive instruction, just as the latter in its final step becomes somewhat deductive in character.

§ 6. Methods of Instruction Abridged and Unabridged

Such are the steps within and the characteristics of the methods of instruction, when procedure in teaching is brought into conformity with the learning processes active during the elementary school period. Each step in a particular method rests upon a given movement of thought as implicitly or explicitly manifest in the given conditioning process of learning, and the work of teaching in each step is conditioned by the character of the thought movement in the corresponding step of the determining learning process. Like the processes of learning upon which they rest, these methods of instruction may at times be abridged. The step of recall may be merged with that of the development of motive and the statement of aim, the work of elaboration may be done in connection with the step of presentation; or the step of synthesis and inference, or that of verification and use may be omitted. What the abridgment may be depends upon the learner and upon what is being mastered. As a rule, however, unless care is exercised, the abridgment of these methods retards rather than facilitates learning. Teaching is consequently most effective on the whole, when a given method is followed step by step in the presentation of a particular lesson.

These methods of instruction, grounded as they are in the mental life of the child, are to be regarded as general methods, that is, they are to be taken as guides by the teacher, in all branches, in inducing processes of inductive perceptual or conceptual learning or similar deductive processes, and these general methods must be made basic in elementary school instruction, if this is to be brought

into conformity with the different processes of learning active during the elementary school period.

Readings

McMurry, *Method of the Recitation*, pp. 78–113, 146–153, 164–174, 190–235.
How to Study, pp. 31–134, 192–220.
Bagley, *Educative Process*, pp. 291–315.
Class-room Management, pp. 188–213.
Keith, *Elementary Education*, pp. 134–184.
Strayer, *The Teaching Process*, pp. 41–77, 114–128.
Earhart, *Types of Teaching*, pp. 38–69.
Dewey, *How We Think*, pp. 201–213.
Charters, *Methods of Teaching*, pp. 146–383.

CHAPTER IX

THE LESSON PLAN AND ILLUSTRATIVE PLANS

§ 1. The Problem

In view of the foregoing general methods, our remaining problem in connection with elementary school instruction is: How may lessons in the studies of the elementary school be so planned as to bring teaching into conformity with these general methods? The answer to this question necessitates a consideration of the lesson plan.

§ 2. The Lesson Plan

1. *Meaning and Kinds of Lesson Plans.* — A lesson plan is the scheme worked out by the teacher to guide him in the teaching of a lesson as this is conditioned by the subject matter to be taught and by the general method of instruction to be employed.

Since each of the general methods of instruction enters in as a determining factor, the nature and character of the lesson plan will vary according as it is conditioned by one or the other of these general methods; in consequence, there are as many different kinds of lesson plans as there are general methods of instruction. If these lesson plans are characterized in terms of the general method conditioning them, we have what may be called inductive perceptual and conceptual, and the corresponding kinds of deductive lesson plans.

2. *A Good Plan and its Characteristics.* — A good lesson plan is one that is adequate to the work in hand. To fix upon its essential characteristics would involve a study of each of the different kinds. Because of a similarity between them, however, this may be done sufficiently well for purposes of practice, if the characteristics of a good plan are considered apart from its particular kind.

The first essential of a good lesson plan is that provision be made for doing the work of each step of instruction as implied in teaching the lesson in accordance with a given general method. This does not mean that the teacher should go out of his way to force the lesson to conform to all the steps in a given general method of instruction, — for example, inductive conceptual,— but it does mean that, in so far as the several steps are involved in the teaching of a given lesson, provision should be made by the teacher for doing the work implied in each step. A lesson is not planned when the teacher fortifies himself on the side of the subject matter and trusts to luck and the occasion, so far as particular methods and means are concerned, or when the work of one or two steps is outlined and the work of the remaining steps left to chance.

A second essential is that, in providing for the distinctive work of each step, the subject matter to be presented, the thought to be brought out, the thing to be done, should be separated from the particular method, and from the ways and means to be employed. Thus, to separate content from ways and means tends to render the plan more serviceable to the teacher and more intelligible to the pupil. A convenient way of doing this is to divide the plan with reference to each step into parallel parts and to place the subject matter or content on the left-

hand side and the particular method or means on the right-hand side.

As a further essential, it is necessary, in connection with each step, to indicate on the side of content the more important facts to be presented or the larger points to be developed, and it may be found of advantage at times to give also certain of the subordinate ones; it is necessary, on the other hand, to indicate the particular method of instruction to be employed. If, for example, the particular method to be used is that of the question and answer, then the questions to be utilized in directing observation or in setting the larger problems should be given, but not all the smaller ones that may by chance be used. For, apart from the basic aspects of content that must be presented, the more important thoughts that must be developed, and the larger use of a particular method that must be employed, if the lesson is to be a success, the teacher should be free to bring out whatever phases of meaning and to make whatever use of method the occasion may demand.

Finally, as a suggestion, — though perhaps not to be viewed as an essential, — it is well to give both the aim of the pupil and that of the teacher. For, as may be readily appreciated, the motive of the child for studying a lesson and the end, from his point of view, to be accomplished through it, may be different from the motive and object of the teacher in presenting the same. The teacher's aim, however, must always include that of the pupil, and it ought to be more comprehensive, especially in the lower grades; in the upper, the two aims will more nearly coincide, and at times the teacher's may be omitted. Thus, to separate the pupil's and the teacher's aim ad-

effectiveness to instruction and makes apparent to others the teacher's object in giving the particular lesson.

3. *Necessity of the Lesson Plan.* — Though the above conception of a good lesson plan and of its essential characteristics leaves ample opportunity, as we believe, for originality, spontaneity, and adaptability, the lesson plan cannot take the place of these in good teaching. On the other hand, inability to make a good plan, lack of appreciation of its worth, and disdain of its use should never be taken as signs of teaching power. For no one, however great his ability, is prepared to teach a lesson until it has been thoroughly worked over, carefully organized, and the plan for it reduced to writing. As a principle, therefore, no lesson should be taught without a written plan.

4. *Plan for Thought-Whole or Single Lesson.* Instruction has to do in the main with thought-wholes, such as, for example, the Critical Period, Decimal Fractions, the Great Stone Face, Adjectives, Plant Distribution, etc. The question arises, are these to be planned as wholes or should there be a plan for each lesson? The larger topics of instruction are readily subdivided into smaller thought units, and as a rule one of these thought units will supply the content of a lesson. It may at times, to be sure, take two or three class periods to present a single unit, but at other times two or even more units may be covered in one recitation. By making one or more of these smaller thought units the basis of a lesson, and through organizing the lesson with reference to the presentation of these units, each lesson has its plan. On the other hand, if each lesson is prepared with a view to presenting one or more smaller units of thought as parts of a larger whole, the

larger topic itself is thereby planned. In short, in dealing with the larger thought-wholes of instruction, each lesson or series should be so planned as to form an integral part of the plan for the larger topic under consideration.

§ 3. Illustrative Inductive Perceptual Lesson Plans

Light will be thrown upon how the different general methods of instruction enter in to condition the teaching of given lessons and upon how these are to be planned, if a few illustrative lessons are given.

LESSON IN PRIMARY NUMBER

Based on Heath's Beginner's Arithmetic

The Meaning of the Number Two

Development of Motive and Statement of Aim

Subject Matter	*Method*
1. To arouse the desire to learn more of the number 2 and of how to use it.	1. You have learned how to count and how the number 1 is used. How many can count by 2's? (Let those who think they can, try.) What is the sum of $\$2 + \$2$? $\$2 + \$2 + \$2$? etc. What is the cost of two Teddy bears at $\$2$ apiece? etc. Some of you do very well, but how many would like to know still more about the number 2 and how to use it?
2. Pupil's Aim: To learn more about what we mean by 2 inches, 2 dollars, 2 gallons.	2. To learn how to use the number 2, it will be best for us if we first learn more about what we mean when we say 2 inches, 2 dollars, 2 gallons, etc. If we try to do this, how may we state the aim of our first lesson on the number 2?
3. Teacher's Aim: To bring the pupils to a better knowledge and a clearer appreciation of the meaning of the number 2.	

Subject Matter	RECALL	*Method*
1. Review of 2 and of its use as known by children: *a*. In counting parts of body *b*. In counting money *c*. In counting objects	1. How many hands have you? Eyes? Ears? Feet? In one dollar, how many fifty-cent pieces? In fifty cents, how many quarters? In a dime, how many five cents? In this room, how many doors, windows, etc.?	

Subject Matter	PRESENTATION	*Method*
1. Use of 2 in constructive exercises: *a*. In making angles *b*. In making triangles *c*. In making squares	1. Have pupils, using inch splints and toothpicks, construct angles, the sides of which are 2 inches, 2 toothpicks in length. Have pupils construct triangles, the sides of which are 2 inches, 2 toothpicks in length. Have pupils construct squares, the sides of which are 2 inches, 2 toothpicks in length.
2. Use in separating into 2 groups.	2. Separate these blocks, splints, toothpicks into 2 groups.
3. Use in separating into groups of 2.	3. Separate these blocks, splints, toothpicks into groups of 2.
4. The symbol 2.	4. Presentation of symbol. Reading and writing of it by pupils.

Subject Matter	ELABORATION	*Method*
1. Emphasis of thought that 2 means a given quantity, measured by repeating a given measuring unit twice.	1. How many inches long is each side of this angle? Of this one? How many times must you repeat a one-inch measure to measure each side? (The angles constructed are used as basis of discussion.) How many inches long is each side of this triangle? How many toothpicks long? How many times must	

you repeat a one-inch measure to measure each side? One toothpick taken as a measure? Ask similar questions with reference to the square.

How many blocks in each group? (Four.) How many altogether? How many times must four blocks used as a measure be taken to measure eight blocks? Ask similar questions with reference to splints and toothpicks.

How many groups of 2 blocks have you? (Six.) How many all together? How many times must 2 blocks taken as a measure be repeated to measure 12 blocks? Ask similar questions with reference to splints and toothpicks.

Subject Matter	SYNTHESIS AND INFERENCE	*Method*
1. Emphasis of meaning of 2.	1. What do I mean by the side of an angle being 2 inches long? The side of a triangle being 2 toothpicks long? The side of a square being 2 inches long? Etc. What do I mean by a group of 2 blocks? Etc. That in 12 blocks, there are 2 groups of 6 blocks? Etc.	
2. Expansion of new meaning of 2 to other measures.	2. What, then, do we mean by 2 inches? 2 dollars? 2 gallons? 2 pounds? Etc.	

Subject Matter	VERIFICATION AND USE	*Method*
1. Application of thought gained of the meaning of 2 in counting.	1. In this class, how many groups of 2 girls? Of 2 boys? Of 2 seats? In this class, how many pairs of eyes? Of hands? Etc.	
2. Application in solution of simple problems.	2. In 4 dollars how many two dollars? Why? In 4 gallons, how	

many two gallons? Why? Etc. In $10 how many $5? Why? In $200 how many $100? Why? Etc.

For ten cents, how many oranges can you buy at five cents each? Why? For $1, how many knives can you buy at 50 cents each? Why? Etc.

The foregoing plan of a lesson in primary number is typical of those for the work in arithmetic of the first three grades, when this conforms to the inductive perceptual method of instruction. How such a plan may be used is not far to seek. Embodying as it does, on the one hand, a statement of the purpose and of the main thoughts to be developed in connection with the given topic, and embodying, on the other, the particular methods and means to be employed in so far as these can be predetermined, the teacher may take the plan as a guide on both the side of content and of method. In the teaching of the above lesson in conformity thereto, there is no assignment to be made, as the work implied is to be done in the class. The teacher may consequently follow the plan step by step and from point to point. The plan, however, is not to be viewed as unalterable. Indeed, it is the mark of a good teacher to be able to adjust her plan to the unforeseen. Yet, as a rule, a plan like the above is sufficiently flexible to be easily altered and can be pursued with little deviation from its essential features. To be sure, the work implied in its execution may consume more than one class or recitation period; but however that may be, such a plan serves day by day as a guide in the presentation and development of the given unit of thought.

LESSON IN PRIMARY READING

Based on the Haliburton Readers

Silver Locks and the Three Bears

Development of Motive and Statement of Aim

Subject Matter	*Method*
1. To stimulate the desire to know the story of Silver Locks and the Three Bears, to reproduce, and to read it.	1. Of whom is this a picture? (Teacher showing a picture of Silver Locks.) It is a picture of Silver Locks. How many have heard the story of Silver Locks and the Three Bears? A very nice play may be made from it. How many would like to know this story? Like to act it in a play? Read it?
2. Pupil's Aim: To learn the story of Silver Locks and the Three Bears that we may act it and read it.	2. If I tell you the story of Silver Locks and the Three Bears, what are we going to try to do?
3. Teacher's Aim: To bring the children to a knowledge of this piece of folklore, to perception of the truth of life therein, and to an appreciative reading of it.	

Recall

Subject Matter	*Method*
1. Review of children's knowledge of bears — appearance, habits, temper.	1. You may tell us how a bear looks. You may tell us where and how he lives. You may tell us what a bear might do if bothered by a little girl.

Presentation

Subject Matter	*Method*
1. Silver Locks and her name. 2. Silver Locks and the butterfly. 3. The home of the Three Bears. 4. The Three Bears. 5. Silver Locks in the kitchen. 6. Silver Locks in the parlor.	1. The teacher here narrates the story point by point on the assumption that the children are unable to gain thought as yet with economy from the printed page, or she gives certain points and develops others,

7. Silver Locks in the bedroom.
8. Return of the Three Bears.
9. Three Bears and their porridge.
10. Three Bears and their chairs.
11. Three Bears and their beds.
12. Discovery and narrow escape of Silver Locks.

varying with conditions. Pictures, drawings, etc. are used to give reality and vividness.

Later, when the children have the requisite ability, they may be assigned the task of reading the story silently in view of acquiring the facts for themselves. In this case, free use is made in this step of the pivotal question, and pictures, drawings, etc. are used to give reality to the impressions gained.

Subject Matter	ELABORATION	*Method*
1. New words: porridge, butterfly kitchen, etc.; also phrase reading.	1. By suggestive questions and free use of past experience, the teacher develops meaning of new written words, teaches spelling, pronunciation, and phrase reading.	
2. Silver Locks.	2. Describe little Silver Locks and tell why this was her name.	
3. The Three Bears.	3. Who were the Three Bears and where did they live?	
4. Silver Locks in the kitchen.	4. What did Silver Locks find in the kitchen and what did she do?	
5. Silver Locks in the parlor.	5. What did Silver Locks find in the parlor and what did she do?	
6. Silver Locks in the bedroom.	6. What did Silver Locks find in the bedroom and what did she do?	
7. Return of the Three Bears to the kitchen.	7. What did the father bear find on returning to the kitchen, and what did he do and say? The mother bear? The baby bear?	
8. The Three Bears in the parlor.	8. What did the father bear find in the parlor and what did he do and say? The mother bear? The baby bear?	
9. The Three Bears in the bedroom.	9. What did the father bear find on entering the bedroom, and what did he do and say? The mother bear? The baby bear?	

10. Narrow escape of Silver Locks.	10. How did Silver Locks escape? Why was it right that she should be greatly frightened?

Subject Matter	SYNTHESIS AND INFERENCE	*Method*
1. Summary of main points of story.	1. Repetition of story as a whole by children.	

Subject Matter	VERIFICATION AND USE	*Method*
1. Use of knowledge and appreciation gained: *a*. In reproducing the story through drawing or moulding *b*. In dramatizing it *c*. In learning to read it with appreciation and expression	1. Have different children draw or mould various parts of story; let them select the best drawings or mouldings and from these construct the story as a whole. Guide and direct the children in dramatizing the story. Guide and direct children in giving oral expression to the thought and spirit of the story.	

Such is the plan of a primary reading lesson when conditioned by the inductive perceptual method of instruction. To teach the given lesson would consume four or perhaps five recitation periods. In the first, the motive would be developed, the aim stated, the proper past experiences recalled, and either the entire story narrated by the teacher or certain points given and others developed. During the second period, through suggestive questions and free discussion, the more important points as indicated in the step of elaboration would be brought out and the story as a whole summarized or retold by the children. There would also be drill upon new words and especially upon phrase reading. Up to this time, all work has been done in the class. At the end of the second period and as preparatory for the next, the children would be divided into

groups and assigned the task of drawing or moulding some particular portion of the selection. In the third, these drawings would be inspected and from the best the story as a whole constructed. The remainder of this period would be taken up with the dramatization of the story, and indeed this might have to go over to a fourth. However this may be, at the conclusion of the period the task of studying the printed story from the point of view of oral expression is assigned to the children as seat work for the last recitation period, and their reading of it with appreciation constitutes the final work in teaching the story of Silver Locks and the Three Bears.

When pupils are able to acquire the desired facts from the printed page, as in the later primary grades, the plan differs somewhat from the above on the method side in the step of presentation, and the work in the step of elaboration becomes more condensed. This makes a difference in the way the plan is used. In this case, at the end of a preceding period the teacher develops the motive, has the desired past experiences recalled, teaches the meaning of the new words, and as a seat task assigns the points outlined in the step of presentation as topics of study. The first period is then devoted to a restatement of the aim, to a brief review of the more important parts of the experiences recalled and the new words taught, and to bringing out one by one, through the use of pivotal questions and free discussion, the different portions of the story. But from this point on, with the exception of differences due to the greater maturity of the children, and the consequent condensation of the work in elaboration, procedure in the two cases is similar.

The pursuance in actual instruction of such a plan

throws the emphasis upon thought-getting and upon the stimulation of appreciation, — the mere mechanics of reading is made secondary. To plan and teach primary reading in this way would, it is believed, materially improve the work in this branch of learning.

The above lesson plan — particularly with the modifications suggested — is not only illustrative of an inductive perceptual lesson in primary reading, but also — because of the similarity of the materials and the character of the instruction — is equally illustrative of how inductive perceptual lessons in the earlier work in history are to be planned and presented. Indeed, the only difference between the two is that oral reading naturally forms no part of history teaching.

LESSON IN HOME GEOGRAPHY

Based on an excursion to the Athens Brick Co.

BRICK MAKING

DEVELOPMENT OF MOTIVE AND STATEMENT OF AIM

Subject Matter	*Method*
1. To stimulate the desire to learn how Athens blocks are made.	1. What is this? (Showing an Athens block, the name of a brick made at Athens.) You may tell of one way in which Athens blocks are used. You may tell of another. Etc. How are Athens blocks made? How many would like to visit the plant and learn?
2. Pupil's Aim: To see how Athens blocks are made.	2. If we do this, what will be the chief purpose of our visit?
3. Teacher's Aim: To teach the children how Athens blocks are made and to thereby lay the foundation of appreciating the essential features in the manufacture of clay products.	

Subject Matter	PRESENTATION	*Method*
1. The shale-bank and the digging of the shale: *a*. Size and appearance of bank *b*. Appearance and character of shale *c*. Mode of digging 2. Conveying of shale to plant: *a*. Cars and tracks *b*. Loading *c*. Mules and drivers *d*. Unloading 3. The mill or grinder: *a*. Shape and character of mill *b*. Letting of shale into mill *c*. Work of mill *d*. Appearance of shale on coming from mill 4. The sieve: *a*. Form and character of sieve *b*. Conveying of shale to sieve *c*. Work of sieve 5. The mixer: *a*. Form and character of mixer *b*. Letting of shale into mixer *c*. The mixing *d*. Appearance of mixed shale 6. The press: *a*. Form and appearance of press *b*. Admission of shale *c*. Work of press *d*. Appearance of shale coming from press 7. The cut-off: *a*. Form and appearance of cut-off *b*. Work of cut-off *c*. Appearance of shale coming from cut-off	1. On visiting the shale-bank, the observation of the children is directed by the teacher through suggestive questions to the points as indicated. 2. Method same as above (1) in the presentation of this and all remaining points.	

8. The repress:
   a. Form and appearance of repress
   b. Work of repress
   c. Appearance of shale on leaving repress
9. The carriage trucks:
   a. Appearance
   b. Use
10. The drying-kiln:
   a. Construction
   b. Hot air fan
   c. The drying
   d. The bricks on coming from drying-kiln
11. The firing-kiln:
   a. Form and construction
   b. Appearance empty
   c. Appearance filled
   d. The firing: fuel and duration
   e. The brick when fired

Subject Matter	ELABORATION	*Method*
1. Shale as material out of which Athens blocks are made.	1. Name and describe the material out of which Athens blocks are made. Tell how it is obtained.	
2. The milling of the shale.	2. Describe the process through which the shale is made into a powder. Why is it made into a powder?	
3. The mixing.	3. When milled, how is the shale prepared for the press? Why is this done?	
4. The pressing.	4. How is the shale pressed? What is the purpose of this?	
5. The drying of brick.	5. Describe the process of drying and tell why this is done.	
6. The burning of brick.	6. Describe the burning by which brick may be found and give reasons as a measure of times. Show the	

Subject Matter	SYNTHESIS AND INFERENCE	*Method*
1. Summary with reference to material used and the process as a whole involved in making Athens Blocks.	1. Describe the material used and tell how Athens blocks are made. 2. Have one section of the class draw a picture of the shale-bank; another, of how the shale is conveyed to the mill, etc. Have class select the best picture from each group and form and preserve as picture-whole of the process.	

The above lesson plan would be used somewhat as follows: At the end of a previous recitation period, the teacher would develop the desire to visit the brick plant and to learn how Athens blocks are made. Wherever possible, it is well to develop in a recitation period, as a class exercise, the different points in the process to be observed. With the desire excited and the object fixed, the teacher on the same or the following day visits the plant with the children, and through directive questioning guides them in the observation of the process point by point as outlined and developed in the step of presentation. (Many excursions and object lessons fail, because the teacher has no definite idea of what is to be observed, and as a result the children, relatively undirected, see little.) On the following day, the distinct parts of the process are taken up one by one, as indicated in the step of elaboration, and through suggestive questions and free discussion, the meaning and purpose of each is made clear. Up to this point, all the work has been done either at the brick plant or in the

On the completion of elaboration and for the suc-
od, the teacher assigns to different groups the
g to describe a given part of the process of

making Athens blocks; there is also assigned the additional task of making a drawing of some particular portion of the process. The final recitation period is then spent in hearing these descriptions; in criticising the drawings, in the selection by the class of the best drawings and in constructing from these a picture of the process. In the given lesson, it will be noted, there is no immediate application made of the information acquired, the present need of the child being satisfied with its acquisition. In geography in general, however, there is a broad field for application and this often takes the form of actual construction.

The above plan, although of an inductive perceptual lesson in geography, serves to illustrate how similar ones in elementary school science are to be prepared, and the suggestions with reference to its use apply equally well to the teaching of these.

§ 4. Illustrative Deductive Perceptual Lesson Plans

LESSON IN PRIMARY NUMBER

Based on Heath's Beginner's Arithmetic

MULTIPLICATION TABLE OF TWO'S

DEVELOPMENT OF MOTIVE AND STATEMENT OF AIM

Subject Matter	*Method*
1. To arouse the desire to learn how to multiply when 2 is the measure.	1. If you buy 2 dolls at $2 each, how do you find the sum to be paid? (Most of the children, in view of previous instruction, will answer, "By addition.") Give other similar problems, and lead them to see that the amount to be paid may be found by taking the given sum as a measure a given number of times. Show the

children the convenience and utility of this method. Tell them that the amount is found by what is called multiplication. You have learned to count by 2's and how to add 2's. I am sure you will now like to learn how to multiply by 2.

2. Pupil's Aim: How to multiply when 2 is the measure.

3. Teacher's Aim: To teach the pupils how to multiply when 2 is the measure and to teach them thereby the multiplication table of 2's.

2. If we try to learn this, what point shall we keep in mind?

Subject Matter	RECALL	*Method*

1. Review meaning of 2.

2. Review addition of 2's.

1. What is meant by $2, 2 pints, 2 gallons, 2 quarts, 2 inches, 2 yards?

2. Add

$2	$2	$2	$2	$2	$2	$2	$2
2	2	2	2	2	2	2	2
	2	2	2	2	2	2	2
		2	2	2	2	2	2
			2	2	2	2	2
				2	2	2	2
					2	2	2
						2	2
							2

Have problems and answers written on blackboard in view of pupils.

Subject Matter	ELABORATION	*Method*

1. Deduction of thought that $2 \times \$2 = \$4$, 2×2 in. $= 4$ in., etc., and that 2×2 of any quantity $= 4$ of that quantity.

1. In the first problem, how many $2 are added? How many times must $2 be taken to measure $4? $2 \times \$2 = ?$ How many times must 2 in. be taken to measure 4 in.? 2×2 in. $= ?$ 2 yd. be taken to measure 4 yd.? 2×2 yd. $= ?$ How many times must 2 be taken to measure 4 of any quantity? 2×2 of any quantity $= ?$ Place answer in view of pupils.

2. Deduction of thought that $3 \times \$2 = \$6$, 3×2 in. = 6 in., etc., and 3×2 of any quantity = 6 of that quantity. 3. Continue until the table including 9×2 is developed.	2. Proceed as in 1.

Subject Matter	SYNTHESIS AND INFERENCE	*Method*
1. Summary of table of 2's as deduced.	1. Summary by pupils through solution of problems: $2 \times \$2 = ?$ $2 \times 2 = ?$ $3 \times \$2 = ?$ $3 \times 2 = ?$ Etc.	

Subject Matter	VERIFICATION AND USE	*Method*
1. Verification of table deduced through comparison with previous work in addition.	1. Compare the sum of $\$2 + \$2$ with the product of $2 \times \$2$, the sum of $\$2 + \$2 + \$2$ with the product of $3 \times \$2$, etc.	
2. Verification through measurements.	2. Measure a 4 in. strip with a 2 in. measure; 6 in. strip; 8 in. strip, etc. Record length of measure, the times taken in measurement, and length of strip measured. Compare results with table as deducted.	
3. Solution of problems.	3. Solution and simple explanation on part of pupils.	
4. Memorize table.	4. Drill on table of 2's.	

The deductive perceptual lesson-plan is used much like the inductive. In teaching the above lesson, the plan would be followed point by point up to and including the first one in the step of verification and use, the work being done in the class. On completing the lesson to this point, the teacher would give, as seat work, the task of verifying the table through actual measurements and the solution and explanation of given problems. The next class period would be devoted to considering the results

obtained by measurement and to the explanation of the respective problems. At the end of this recitation, the remaining examples would be assigned, also the formulation by the children of other problems and their solution, and the task of memorizing the table. The succeeding period would then be spent in the explanation of these problems by the children and in drill upon the table.

The deductive perceptual method of instruction has as yet been little used in primary number. Nevertheless, in all but the very earliest portions, it finds a broad field of application. It is believed that, as time goes on, such instruction will be brought more and more into conformity with this method and that the deductive perceptual lesson will come more and more into use.

LESSON IN PRIMARY READING

Based on Baldwin's *Robinson Crusoe*

How Robinson Made Pots and Jars

Development of Motive and Statement of Aim

Subject Matter	*Method*
1. To stimulate the desire to learn how Robinson made pots and jars.	1. What did we learn in our last lesson that Robinson had succeeded in raising? What are some of the more important things that your mother uses in cooking? Which did Robinson have? Of those he didn't have, which would he now need the most? Why? (Lead the children to see that he would need pots to cook in and jars to put things in.) How might Robinson get them?
2. Pupil's Aim: To find out how Robinson made pots and jars.	2. If we try to find out, how may we state the aim of our lesson?
3. Teacher's Aim: To lead the children to see how Robinson made	

pots and jars, and thereby to appreciate primitive modes of making these; and also to appreciate the advantages of living in an age and society like our own.

Subject Matter	PRESENTATION	*Method*
1. Need of finding suitable material.		1. If Robinson was to have pots and jars, what would he have to secure? (Lead children to see that he must have suitable material.)
2. Need of finding out how to form material into pots and jars.		2. Having procured the material, what further difficulties would Robinson have? (Lead children to see that he must learn to make pots and jars from the given material.)

Subject Matter	RECALL	*Method*
1. Review of how Logan crocks and jars are made: material used, moulding, drying, firing.		1. Out of what did we find that Logan crocks and jars are made? How are these moulded? How dried? How hardened?
2. Review of materials used in making pots and jars.		2. What materials are used in making pots and jars?
3. Review of use of pots and jars.		3. In what ways does your mother use her pots and jars?

Subject Matter	ELABORATION	*Method*
1. Material used by Robinson.		1. Of what would Robinson think to make his pots and jars? Which of these would he decide upon and why? How do you suppose he went about finding the right kind of clay? (Lead children to see that he would have to make both of clay and that it would not be easy to find it.)
2. Moulding of pots and jars.		2. How would Robinson mix the clay and mould his pots and jars? (Lead children to see that he would have to mix the clay and mould the

	vessels by hand, and that it would take many trials to learn how to do the latter.)
3. Drying of pots and jars.	3. How would Robinson dry his pots and jars? (Lead children to see that he would put them in the sun.)
4. Firing of pots and jars.	4. How would Robinson fire his pots and jars? (Lead children to see that he would build a fire around them, and that it took many trials to learn how to do this well.)
5. Use made of pots and jars.	5. Why did Robinson want pots and jars? How did he use them?

Subject Matter	SYNTHESIS AND INFERENCE	*Method*
1. Summary: material used, way of moulding, drying, firing; use made of finished articles.	1. Tell the story of how you think Robinson made his pots and jars and of how you think he used these.	

Subject Matter	VERIFICATION AND USE	*Method*
1. Reading of how Robinson made his pots and jars and of how he used them, pp. 74–77. 2. Application of knowledge gained in moulding pots and jars and in firing these where convenient.	1. Guide and direct children in the learning of new written words and in reading the story. 2. Guide and direct children in moulding, drying, and firing pots and jars.	

In teaching this lesson according to the above plan, since relatively all the work is done in the class, the teacher would be able in the first recitation period to stimulate the necessary motive, be able doubtless to cover the steps of presentation and recall, and to advance well along into that of elaboration. In the second, beginning with a brief review, the remaining points in the step of elaboration would be developed and the story as a whole summarized by the children. At the end of this period, there

would be assigned as seat work a study of the printed story with a view to seeing how Robinson actually made his pots and jars, and to giving oral expression to the story. The final recitation would then be devoted to the reading of the story.

This plan is not only typical of deductive perceptual lessons in primary reading, but because of similarity between the two, it illustrates also how to plan and present similar lessons in primary history; and from the nature of these subjects as they appear in the primary grades, they offer wide range for the use of deductive perceptual instruction.

§ 5. Illustrative Inductive Conceptual Lesson Plans

LESSON IN ARITHMETIC

Based on Walsh-Suzzallo's *Arithmetics, Practical Applications*

To Find a Given Per Cent of a Number

Development of Motive and Statement of Aim

Subject Matter	*Method*
1. To stimulate the desire to learn how to find the part of a number when that part to be found is given in terms of per cent.	1. You have learned how to find a fractional part of a number, also how to find a decimal part. In the world of business, the part of a number to be taken or to be found is expressed usually in terms of per cent rather than in terms of common or decimal fractions. The business operations in which this is true are the more important ones and the ones with which we all have to do sooner or later. To know how to find a given per cent of a number is as helpful as to know how to find a fractional or decimal part.

2. Pupil's Aim: To learn how to find a given per cent of a given number. 3. Teacher's Aim: To give to the child the knowledge and power needed to find any per cent of any number, and which will enable him to appreciate the arithmetical side of various business operations.	2. If we take up this question, who will state our problem?

Subject Matter	RECALL	*Method*
1. Review the definition of a decimal and the writing and reading of hundredths, pp. 68, 103–104.		1. Define a decimal fraction. Rapid drill in reading and writing decimals in hundredths.
2. Review the multiplication of a decimal by a decimal and solve problems, pp. 106 and 178.		2. How is one decimal multiplied by another, or how is the decimal part of a number found? Rapid drill in finding the decimal part of a number.
3. Review the elements in problems in multiplication and the relations between them, pp. 9 and 15.		3. What terms are used to characterize the elements in a problem in multiplication? What is the relation between these elements?

Subject Matter	PRESENTATION	*Method*
1. Meaning of per cent and its sign. Exercises, p. 202.		1. Explanation by teacher of meaning of per cent and of its sign, and brief and rapid drill in reading per cents.
2. Conversion of per cent into decimal. Exercises, p. 203.		2. Explanation by teacher of the expression of per cent in the form of a decimal, and rapid drill in converting different per cents into decimals.
3. Meaning of base, rate, and percentage as elements of problems of percentage.		3. Explanation by teacher of meaning of base, rate, and percentage, and rapid drill in giving the base, rate, and percentage of different problems.
4. Find 5% of $100.		4. Lead pupil to express given per cent in form of decimal, and to pro-

	ceed as in finding the decimal part of a number. What are the given elements in the problem? The one to find? How was the given element found?
5. Find 6% of $250.	5. Proceed as in 4.
6. Find 7% of $325.	6. Proceed as in 4.

Subject Matter	ELABORATION	*Method*
1. Base and rate elements given, percentage to be found.		1. In each of the above problems, what elements were given? What one was to be found?
2. Given per cent converted into a decimal.		2. In the solution of each of the above problems, into what was the given per cent converted?
3. Percentage found through process of multiplication of decimals.		3. In the solution of the above problems, when the given per cent was expressed in form of a decimal, how was the desired decimal part found?

Subject Matter	SYNTHESIS AND INFERENCE	*Method*
1. Summary of common elements in problems and in process.		1. What are the common elements found in the problems solved and in the process used?
2. Rule: When the base and rate are given to find the percentage, convert the given per cent into a decimal and proceed to find the desired decimal part as in the multiplication of decimals.		2. The above problems are typical of all of their kind. When the base and rate are given, how can the percentage be found? Or how can you find any per cent of any number?

Subject Matter	VERIFICATION AND USE	*Method*
1. Apply knowledge gained to an explanation of tax rate, interest rate, insurance rate.		1. What do we mean by interest rate? Tax rate? Etc.
2. Apply knowledge gained to solution of problems. Solve problems 1–4, p. 204.		2. Solution and explanation of problems on part of pupils.

The above is, in the main, illustrative of all inductive conceptual lesson plans, where the aim is the gaining of a class concept, and this is true whether in grammar, geography, or other elementary school subjects. Apart from arithmetic, it is, however, more especially illustrative of lessons in formal grammar.

In form, it will be noted that inductive perceptual and conceptual lesson plans are similar. They are used, however, somewhat differently. In teaching the above lesson in pursuance of the given plan, the teacher, at the end or for practical reasons preferably at the beginning of a preceding class period, takes time to develop the motive for learning how to find any per cent of any number, and assigns as a seat task and as preparatory to the succeeding period the work in review as outlined in the step of recall.

At the beginning of the first recitation upon the given topic, the teacher has the reasons for studying it and the aim of the lesson restated. He then advances to the work of recall and conducts it as a sharp, rapid review, the pupils having made appropriate preparation for this. The points as indicated in the step of presentation as well as of elaboration are then taken up one by one and developed, and the net results are brought together in the statement of the rule by the children.

With this fixed in mind, the teacher assigns as seat work and as that of the succeeding recitation the problems as indicated, dividing the class into sections and holding each responsible for the solution and explanation of given problems; the following period is then devoted to the solution and explanation of these and other problems in view of the rule derived.

LESSON IN READING

Based on Elson's *Grammar School Fourth Reader*

YUSSOUF

DEVELOPMENT OF MOTIVE AND STATEMENT OF AIM

Subject Matter	*Method*
1. To arouse an interest in the forms of charity and in the effects of being charitable.	1. What are some of the more important elements of character? Bring out through thought-provoking questions the idea that charity is one of the most important virtues. There are at least three forms of charity: it finds expression in alms giving, in tolerance toward the thoughts that others may have toward us, and in forgiving acts that have been done against us. (Develop through questions and free discussion.) The exercise of charity not only benefits the one who receives, but the one who gives. (Raise the question of the effects of exercising charity.) Lowell has given us his idea of the highest form of charity and of the effects of exercising charity in the poem *Yussouf*.
2. Pupil's Aim: To learn what form of charity Lowell considered the highest, and to learn his idea of the effects of exercising charity. 3. Teacher's Aim: To lead the children to a better appreciation of the highest form of charity and of the effects of exercising charity; also to an understanding and appreciative reading of *Yussouf*.	2. In studying this poem what points shall we keep in mind?

Subject Matter	RECALL	*Method*
1. Waste or arid land, at times intense heat, and great storms. People nomadic; chief need, food and shelter; primary virtue, hospitality.		1. Review the chief characteristics of the Sahara and of the American Desert; habits, needs, and virtues of desert people.
2. Gifts of Carnegie, charity of Lincoln, etc.		2. Review known acts of charity.

Subject Matter	PRESENTATION	*Method*
1. Desert land.		1. Where is the scene of this poem laid? Reasons?
2. As an outcast, "against whose life the bow of power is bent," and as one who "hath not where to lay his head." For food and shelter. Yussouf was called "The Good."		2. How did the stranger feel when he came to Yussouf's tent? For what did he come? Why did he come?
3. "This tent is mine, but no more than it is God's." "Come in and be at peace." "Freely shalt thou partake of all my stores as I of His." Shows Yussouf to be a God-loving and God-fearing man.		3. How did Yussouf feel toward all he possessed? What welcome did he give the stranger? How freely was the stranger to partake? Why? What light does stanza two throw upon the character of Yussouf?
4. "Here is gold, my swiftest horse is saddled for thy flight," etc. The stranger was softened and given new light and hope. "Nobleness enkindleth nobleness." Both hospitable and charitable.		4. What did Yussouf give the stranger on the morrow, and what did he say? What effect did such kindness have? How does the poet say that nobleness is kindled? What kind of a man is Yussouf shown to be in stanza three?
5. "That inward light" "Which shines from all self-conquest." "Unto that Ibrahim who slew thy son." That he was susceptible to kindness and not wholly bad.		5. What light made the stranger's face grand? What confession did the stranger make? What light does stanza four throw upon the character of the stranger?
6. To avenge the murder of his son.		6. What was the one black thought of Yussouf?

"Take thrice the gold for with thee," etc.	How did the confession of the stranger affect Yussouf?
By forgiving and making a better man of the murderer.	How did Yussouf avenge his son?
"Balanced and just are all of God's decrees."	How did such a vengeance make Yussouf feel toward God?
Not wholly good.	What light does stanza five throw upon the character of Yussouf?
Made stranger a better and nobler man.	What effect do you think such vengeance had upon the stranger?

Subject Matter	ELABORATION	*Method*
1. Yussouf's charity even greater.		1. Contrast Yussouf's hospitality with the public gifts of Carnegie, his forgiveness of the stranger with charity of Lincoln toward his critics and the South.
2. On coming, the stranger felt as a refugee against whom the bow of power was bent; on leaving he was at peace with himself, with his fellowmen, and with God.		2. Contrast the feeling of the stranger on coming to Yussouf and on leaving him.
3. Before the stranger came Yussouf was not at peace; when the stranger left, he was at peace with himself, with his fellowmen and with God.		3. Contrast the feeling of Yussouf before the stranger came and when he left.
4. Both were made better and nobler men.		4. Compare the effects of Yussouf's charity upon the stranger and upon himself.
5. Yussouf exercised the highest form of charity in forgiving Ibrahim.		5. Contrast the different acts of Yussouf. In which did he exercise the highest form of charity? Why?

Subject Matter	SYNTHESIS AND INFERENCE	*Method*
1. The highest form of charity is forgiving the evil acts of others toward us. Charity not only makes better the one exercising it, but also makes better the one toward whom it is shown.		1. What, then, is the highest form of charity? What effects does the exercise of charity have upon the one exercising it and upon the one receiving it?

Subject Matter	VERIFICATION AND USE	*Method*
1. Viewing known charitable acts in light of this conclusion: founding of hospitals, free public libraries. Analysis of effects of charitable acts of children: collecting clothing and flowers for Thanksgiving donations, Decoration Day, etc.	1. Guide and direct children in verifying the truth of this conclusion.	
2. Making conception gained real in daily actions of children.	2. Guide and direct children in application of the conception gained to daily actions.	
3. Application of ideas and appreciation acquired in the oral reading of Yussouf.	3. Guide and direct children in oral reading of poem.	

To teach the poem "Yussouf" according to the above plan, the teacher, at the end and preferably at the beginning of the preceding recitation, seeks to stimulate the desire and to fix the object to be kept in mind in the study of the poem. With the desire aroused and the aim determined, he assigns the work as outlined in the step of recall. This is given by topics; for example, the habits of desert people; these are remembered and by older children copied into their notebooks, and become points for review. In like manner the work as indicated in the step of presentation is assigned topic by topic, and the children are expected to study the poem with reference to each of these, to reflect upon and be ready to discuss them. Such would be the assignment of the first lesson and the seat or home task of the children.

At the beginning of the next period, the teacher has the aim of the study restated and proceeds to the work of recall. This is taken up topic by topic and the desired information brought to mind. With this done, advance

is made to the step of presentation, and through the use of the pivotal questions formulated and others improvised, through free yet directed discussion of the pupils, the points of the poem as outlined in this step are brought out one by one. In a similar way the teacher proceeds to develop the larger underlying thoughts of the poem as indicated in the plan for the step of elaboration. At times the thoughts to be made clear in this step may be given as points for study along with the assignment made in connection with the steps of recall and presentation, but as a rule it is preferable to leave these to be developed in the class, after the teacher has made sure that the pupils are in a position to make the necessary comparisons and to draw the desired conclusions. With the larger thoughts of the poem thoroughly comprehended, the teacher leads the children to bring these together into one connected whole or generalization, and directs them in making the desired application of the truth attained. With the children in possession of its central thought and with a greater or less appreciation of its beauty and atmosphere, the teacher assigns, as seat or home work, the task of studying the poem with reference to oral expression; and reading it with appreciation constitutes the work of the final recitation.

The above may be taken as typical of inductive conceptual lesson plans for the teaching of literature in all the grammar grades. The teaching of literature in pursuance of such a plan throws the emphasis, as is readily seen, upon the getting of thought and feeling and upon the development of appreciation; whereas reading as an exercise in oral expression is given a minor place. Instruction in pursuance of such a plan involves two distinct, though

related, considerations of a given selection. The first of these may be termed the silent study, that is, the study of the selection to gain the thought and to get into its spirit and atmosphere — in short, to gain an appreciation of the selection as literature. The second follows and may be termed the oral study, that is, a study of the selection with a view to giving appropriate expression to the thoughts and feelings embodied therein. Thus to teach the reading of the grades would change the present point of emphasis and the present method of procedure. However that may be, the above method is the one that must be pursued, at least with worthy selections, if the reading of the grades is to contribute its just share to the realization of the aim of elementary education, if it is to be brought into conformity with inductive conceptual learning and made to comply with our best views upon the psychology of expression.

LESSON IN HISTORY

Based on Thompson's *History of the United States*

PLYMOUTH COLONY

DEVELOPMENT OF MOTIVE AND STATEMENT OF AIM

Subject Matter	*Method*
1. To arouse the desire to learn more about the life, character, and ideals of the early Puritans.	1. Where is Plymouth Rock and why is it so famous? What was the *Mayflower* and why is it so noted? From whom did we get the custom of observing Thanksgiving Day? What is meant by being Puritanic? From whence came the Congregational Church? Our idea of the town-meeting? Our conception of Sabbath observance? We should be able to answer these questions more

2. Pupil's Aim: To study the founding and development of the Plymouth Colony in order to learn more about the life, character, and ideals of the early Puritans.

3. Teacher's Aim: To lead the pupils to a fuller knowledge of the life, character, and ideals of the early Puritans in order to lay the foundation for an appreciation of American life and ideals.

intelligently, if we knew more about the life, character, and ideals of the early Puritans.

2. We can learn about them best through a study of the Plymouth Colony. If we study the founding and development of this colony, how may our primary object be stated?

Subject Matter	RECALL	*Method*
1. Review motive for settlement of Virginia. §§ 48, 50, 52.		1. What were the motives leading to the settlement of Virginia?
2. Review character of Jamestown settlers. §§ 52, 55, 61, 67.		2. What was the character of the early settlers of Jamestown?
3. Review hardships of early settlers. §§ 52, 54, 57, 63.		3. Describe the hardships of the early settlers of Virginia.
4. Review form of government in 1619. § 60.		4. What were the essential features of the government of Virginia in 1619.
5. Review religious life of Jamestown settlers. §§ 65, 71.		5. Characterize the religious life of the early Virginians.

Subject Matter	PRESENTATION	*Method*
1. Religious conditions in England in reign of James I. § 67.		1. What were the religious conditions in England in the reign of James I?
2. The Separatists. § 107.		2. Characterize the religious position of the Separatists.
3. Escape to Holland and life there. § 107.		3. Why did the Pilgrims go to Holland? Describe their life there.
4. Reasons for leaving Holland and for coming to America. § 107.		4. Why did the Pilgrims leave Holland? Why did they come to America?
5. Conditions under which they came to America. § 108.		5. What were the conditions under which the Puritans came to America?

6. The character of the settlers. §§ 107, 108.	6. What was the character of the Puritan settlers?
7. The Mayflower Compact. § 109.	7. What are the more essential points of the Mayflower Compact and what is its significance?
8. Settlement and hardships. §§ 110, 111, 112, 114.	8. Describe the settlement and hardships of the Pilgrims.
9. Form of government and political life. §§ 113, 118.	9. Characterize the form of government and describe the political life of the early Puritans.
10. Form of religion and religious life. §§ 117, 118.	10. Characterize their form of religion and describe their religious life.
11. Union with Massachusetts Colony. § 113.	11. Reasons for uniting Plymouth Colony with Massachusetts Colony?

Subject Matter	ELABORATION	*Method*
1. Motives of Virginians, economic, of Puritans, political and religious.		1. Contrast the motives of the early Virginians with those of the early Pilgrims for making settlement.
2. Virginians adventurous, wealth-seeking; Puritans God-fearing, liberty-loving.		2. Contrast the character of the early Virginians with that of the early Pilgrims.
3. Hardships of Pilgrims as great as those of Virginians.		3. Which suffered the greater hardships, the early Virginians or early Puritans?
4. Government of Pilgrims even more democratic than that of Virginians.		4. Compare the political life and ideals of the early Virginians and the early Puritans with reference to democracy and place in life.
5. Religion of Pilgrims, Congregational, of Virginians, Episcopal; heart and center of Puritan life, minor matter to Virginians.		5. Contrast the religious life of early Virginians and Puritans and the place of religion in the life of each.

Subject Matter	SYNTHESIS AND INFERENCE	*Method*
1. Summary of main points with reference to motives for settlement, the life, the political and religious ideals of the Puritans.		1. Give a summary of the chief thoughts gained with reference to the motives for settlement, the life, the political and religious ideals of the Puritans.

Subject Matter	VERIFICATION AND USE	*Method*
1. Apply knowledge gained to the explanation of the origin of the Congregational Church, town-meeting, ideas of democratic government, Sabbath observance, etc. 2. Apply knowledge gained to reading, as collateral work, The Landing of the Pilgrims, The Pilgrim Fathers, Miles Standish, etc.		1. Explain the origin of the Congregational Church. Explain the existence of our present town-meeting. To what extent has the Puritan conception of Sabbath observation influenced our own ideas? 2. Guide and direct the reading of the selections suggested, as well as others, that the children may utilize the knowledge gained in reading and understanding these, and may obtain thereby further insight into the life, character, and ideals of the Puritans.

The foregoing inductive conceptual lesson plan in history is similar to the corresponding one in literature and is used much in the same manner. The teacher develops the motive and leads the pupils to a statement of the aim. He then assigns to the class as a whole, for seat or home study, the work as outlined in the steps of recall and presentation; individual pupils may make reports on special topics. The children use their texts and the materials suggested in making the reviews indicated and in acquiring the desired facts. This assignment is gone over point by point in the succeeding period and the special reports heard. With the reviews made — which supply a partial basis of interpretation — and with the needed facts fixed clearly in mind, the teacher seeks, in the same or following period, through the use of problem setting questions, to bring out the significance of the given materials; he directs the children in bringing the more important aspects of their meaning into a thought-whole and guides them in applying the insights gained to the explanation and interpretation

of present social conditions and problems. As suggested in connection with the plan in literature, assignment may be made of the work as prescribed for the steps of elaboration, synthesis, and application, and the pupils may be required to prepare to recite upon it. As a rule, however, it will be found best to leave this to be done in the class.

The above plan is not only typical of inductive conceptual lessons in history, but illustrates equally well like lessons in geography, where the object is the development of an individual concept — for example, of wheat raising in North Dakota, of stock raising in Texas, or of the climate of the Central States. Such geography lessons are not only similarly planned — barring the difference in the nature of the subject matter — but also similarly used.

§ 6. Illustrative Deductive Conceptual Lesson Plans

LESSON IN GRAMMAR

Based on Hyde's *Two-Book Course in English*, Book Two

The Noun Clause and Its Uses

Development of Motive and Statement of Aim

Subject Matter	*Method*
1. To arouse the desire to know the different kinds of clauses and how each is used.	1. We have learned to define the clause as a "division of a sentence containing a verb with its subject." There are various kinds of clauses, each having its distinct function in language, and skill in their use implies a knowledge of each kind. That you may gain this knowledge and skill, we shall take up the study of the different kinds of clauses.
2. Pupil's Aim: To learn about the noun clause and how it is used.	2. The subject as a whole is too large for one lesson, so we will begin with the noun clause.
3. Teacher's Aim: To bring the	

pupils to an appreciation of the character and function of the noun clause.

Subject Matter	PRESENTATION	*Method*
1. "That such men should give prejudicial views of America is not a matter of surprise." "That man is more than mortal is true." 2. "I confess these stories, for a time, put an end to my fancies." "I am aware that a skillful illustrator of the immortal bard would have swelled the materials." 3. "The terms of admission to this spectacle are, that he have a certain solid and intelligible way of living." "The true sign of character is, that a man live as he preaches." 4. "Cecil's saying of Sir Walter Raleigh, 'I know that he can toil terribly,' is an electric touch." "The slogan of the American Revolution—life, liberty, and the pursuit of happiness are the unalienable rights of man — has circled the world." 5. "At length he reached to where the ravine had opened through the cliff." "The army pushed forward to where the English had previously camped."	1. These sentences, as well as the following, are to be written upon the blackboard in full view of the class. What is the clause in the first sentence? In the second? 2. Proceed here and in the following as in 1.	

Subject Matter	RECALL	*Method*
1. Review definition of a noun, p. 9. 2. Review uses of nouns: *a*. As subject of verb, pp. 46, 183–184. *b*. As object of verb, pp. 46, 189–190.	1. Define a noun and give illustrations. 2. Illustrate the use of a noun as subject of a verb, as object of a verb, as complement, in apposition, as object of a preposition.	

c. As complement, pp. 105–106, 184–185.

d. In apposition, pp. 185–186.

e. As object of preposition, pp. 46, 190–191.

Subject Matter	ELABORATION	*Method*
1. Use of noun clause as subject of verb.		1. In the first group of sentences, how are the clauses used or what function do they perform? Contrast this use with that of the noun as subject of verb. What is one use of this kind of a clause?
2. Use as object of verb. 3. Use as complement. 4. Use in apposition. 5. Use as object of preposition.		2. Proceed here and in the following as in 1.

Subject Matter	SYNTHESIS AND INFERENCE	*Method*
1. Definition of noun clause.		1. What is the common characteristic of the above clauses? These are typical of noun clauses. Define a noun clause.
2. Uses of noun clauses.		2. What are the different uses of the above clauses? These are illustrative of the more important uses of the noun clause. In what ways, then, are noun clauses used?

Subject Matter	VERIFICATION AND USE	*Method*
1. Verification of definition and uses of noun clause, as deduced, p. 239.		1. Study definition and uses as given, compare with results obtained, and correct where necessary.
2. Selection and designation of noun clauses in sentences. Sentences pp. 240–242.		2. Select the noun clause in the first sentence and tell how it is used. Etc.
3. Writing sentences by children illustrating uses of noun clause.		3. Read your first sentence, give the noun clause, and tell how it is used. Etc.

To teach this lesson as planned, the teacher, at the end or at the beginning of a previous period, develops the motive for the study and has the aim of the lesson formulated. As seat or home work, he then assigns the reviews as indicated in the step of recall. On the following day, after having the aim restated, he proceeds to have the children pick out the clauses in the sentences as given under subject matter in the step of presentation. These sentences as suggested are to be written in full view of the school. With the clauses in these determined, the teacher takes up the reviews as assigned. With the facts to be given meaning presented and the basis of this brought to the mind of the pupil, he proceeds to deduce point by point, as indicated in the step of elaboration, the different uses of the noun clause. After this is done, the results are drawn together, as the work of the step of synthesis and inference, into a formal statement and these conclusions verified through a comparison with the text. At the end of this period, there is assigned as seat or home work the task of picking out the clauses in given sentences, of determining their use, and of writing other sentences. The second recitation is then devoted to restating, as corrected, the conclusions attained in the previous period, and to characterizing the use of the clauses in the sentences assigned and in those written by the children.

This deductive conceptual lesson plan not only illustrates how such lessons in grammar are to be planned and taught, but it is also typical — barring slight variations arising from differences in content — of similar ones in arithmetic. Of the subjects taught in the public school, these two afford the widest range for the use of the deductive conceptual method of instruction, and nothing else would so improve

the present teaching of these branches as to make a considerable portion of it deductive in spirit and in truth.

LESSON IN GEOGRAPHY

Based on Tarr and McMurry's *Complete Geography*

RAINFALL OF THE WESTERN STATES

DEVELOPMENT OF MOTIVE AND STATEMENT OF AIM

Subject Matter	*Method*
1. To arouse a desire to learn about the rainfall of the Western States.	1. What do we mean by the American Desert? Where is it? Why is the country between the Cascade, Sierra Nevada, and the Rocky Mountains so desert-like? Why so little rain? The answer to this question necessitates a study of the rainfall of the Western States.
2. Pupil's Aim: To study about the rainfall of the Western States in order to see why the country between the Cascade, Sierra Nevada, and the Rocky Mountains is so like a desert. 3. Teacher's Aim: To bring the children to a knowledge of the rainfall of the Western States that they may be able to appreciate the differences in climate, in industries, and in life.	2. If we take up this topic, how may your aim be stated?

Subject Matter	PRESENTATION	*Method*
1. Proximity of Western States to the Pacific Ocean. Fig. 131. 2. Principal mountain ranges and highest altitude. Fig. 131; Appendix, p. ix. 3. Principal plateaus and altitudes. Fig. 131, 43; Appendix, p. ix.		1. Upon what ocean do the Western States border? 2. Name and locate the principal mountain ranges of this section and give their highest altitude. 3. What are the principal plateaus of this section and what is the altitude of each?

4. Prevailing direction of winds on north Pacific side and on south Pacific side. Fig. 249, 254.	4. What is the prevailing direction of wind on north Pacific side? On south Pacific side?
5. Breadth of section. Fig. 131.	5. What is the breadth of this section on the north? On the south?

Subject Matter	RECALL	*Method*
1. Review of general conditions determining rainfall: proximity to ocean, altitude, prevailing direction of winds, pp. 220–221.	1. What are the general conditions determining rainfall?	
2. General conditions of heavy, moderate, light, and scant rainfall.	2. What are the general conditions of heavy rainfall? Of moderate? Of light? Of scant?	

Subject Matter	ELABORATION	*Method*
1. Heavy rainfall on northern coast as effect of proximity to ocean and prevailing direction of wind.	1. Contrast the conditions on the northern coast with those essential to heavy rainfall. In view of the essential similarity, what must be the nature of the rainfall?	
2. Moderate and light rainfall in interior of northern section as effect of distance from ocean, altitude, and prevailing direction of winds.	2. Contrast the conditions in the interior of northern section with those of moderate and light rainfall. In view of the similarity, what must be the character of the rainfall?	
3. Moderate rainfall upon southern coast as effect of proximity to ocean and prevailing direction of winds.	3. Contrast conditions on southern coast with those implied in moderate rainfall. What must be its character there?	
4. Light and scant rainfall in interior of southern section as effect of distance from ocean, altitude, and prevailing direction of winds.	4. Contrast the conditions as found in the interior of southern section with those of light and scant rainfall. In view of similarity, what must be the rainfall of this section?	
5. Direction of prevailing winds as chief cause of differences in rainfall.	5. What is the chief cause of the difference in the rainfall of north and south coast sections? Of north and south interior sections?	

Subject Matter	SYNTHESIS AND INFERENCE	*Method*
1. Summary of deductions with reference to rainfall in Western States.	1. In view of proximity to ocean, prevailing direction of winds, and altitude, characterize the rainfall of different sections of the Western States.	

Subject Matter	VERIFICATION AND USE	*Method*
1. Verification of deductions through study of facts as given in text. Fig. 252; pp. 133–135.	1. Reading or study of authoritative facts and a comparison of these with those derived through deduction, and the correction of inferences where necessary.	
2. Explanation of the American Desert.	2. Why is the country between the Cascade, Sierra Nevada, and Rocky Mountains so desert-like?	
3. Use of insights gained in future explanations of climate, industries, and life of Western States.		

In view of our discussion of how to use the deductive conceptual lesson plan in grammar, only an additional word with reference to its use is needed here. In the grammar lesson, it will be remembered, the facts to be given meaning were brought to the pupils by the teacher, and this is to a large extent true also in similar lessons in arithmetic. In this mode of instruction in geography, and in so far as it is applicable to history, it will be found preferable, as a rule, to let the pupils gather the facts for themselves, either through direct observation or from the printed page. Just those to be acquired in a given case may be determined by the class as a class exercise, or they may, where this seems best, be indicated by the teacher as a part of the assignment, and their acquisition forms — along with the review as indicated in the step of recall —

the seat or home work. In teaching the lesson, the teacher then follows the plan step by step and point by point, and the treatment of a topic such as the above need not consume more than one recitation.

§ 7. Lesson Plans Abridged and Unabridged

The above lesson plans cover, it will be observed, the gamut of the more important branches in the elementary school. By using these as types, it may readily be inferred how a lesson in a subject in which an illustrative lesson is not given may be planned and this plan used. It will also be observed that the above plans are based upon texts now in use in our schools and upon the subject matter as found in them. For this reason they are more truly illustrative of how lessons in actual school subjects are to be planned and presented, if teaching in the elementary school is to be brought into conformity with the different general methods of elementary instruction.

Each step in the above plans rests, as will be noted, upon a given step in the corresponding general method. Like the learning processes and like the general methods derived from these processes, the lesson plan may be abridged — that is, the work of elaboration may be planned to be done in connection with the step of presentation and *vice versa;* or, the work of the step of recall, or of inference and synthesis, may be omitted. Just the abridgment that may well be made in a given plan and consequently in the presentation of a given lesson depends upon the child and upon what is being taught. As a rule, however, if the lesson is difficult, teaching is most effective when the plan is unabridged — that is, when provision is made for the work of each step as conditioned by the given general

method, and when the lesson is taught step by step and point by point as planned.

Readings

Charters, *Methods of Teaching*, pp. 415–434.
Earhart, *Types of Teaching*, pp. 220–263.
McMurry, *Method of the Recitation*, pp. 257–287.
Strayer, *The Teaching Process*, pp. 167–223.

CHAPTER X

THE ORGANIZATION OF THE ELEMENTARY SCHOOL

1. *Education is a function of society, and the educational system of a given society must be such as will provide for its existence, development, and perfection.*

2. *That system of education which provides for the existence, development, and perfection of a given society is at the same time the system which will provide for the highest mode of life, the highest development and self-realization of its members.*

3. *The giving of appropriate expression, control, and direction to the will, or the development of the will, constitutes the primary work of education, the end to which every phase of it must contribute and be subordinated.*

4. *The development of the intellect is the secondary work of education, and the intellect must be so developed with respect to both form and content and only so developed as to give the will the necessary expression and the desired determination.*

5. *Education must seek, in each period of child life, to give to the will that expression and determination and to the intellect that form and content appropriate to the development of the distinctive will and intellectual characteristics of the period, appropriate to secure a normal will and intellectual development in the succeeding one, and appropriate to secure the will and intellectual development desired.*

§ 1. The Problem

The second means through which the aim of education is realized is school organization. As a problem, the organization of the school is a difficult one, and its solution, even were we able to solve it, would carry us far afield. For our purpose, it may be restricted and stated thus: In view of the aim and principles of elementary education, what are the factors entering in to condition the organization of the elementary school, and in what ways is this determined by each?

§ 2. Factors Conditioning the Organization of the Elementary School

The first of these factors is the child. The child is a factor because he is the subject of education and it is in his life that its aim is to be realized. Society is another factor, because social needs and ends are conserved by education and it is in the life of the social whole that the purposes of the school are to be actualized. Instruction is a third, because it is the primary means through which educational work is accomplished.

Although the child, society, and instruction are factors in conditioning the organization of the elementary school, the primary factor is the given aim of elementary education. It is in the light of this that every part of school organization should be tested; it is this that should give meaning and unity to its every portion. Indeed the child, society, and instruction are conditioning factors therein only in so far as they must be taken into account in the attainment of the purposes of the elementary school.

§ 3. The Child as a Factor

The claims of the child upon the organization of elementary education may be divided into those imposed by his physical and those imposed by his psychical nature. Although these claims are not to be viewed as separate, for purposes of clearness it is well to consider them apart.

1. *Claims Imposed by Physical Nature and Implications.* — The claims registered by the physical nature of the child, in view of the first two of the above principles, is that the school be so organized as to conserve his health and foster his physical development as conditioned by the working aim of the given elementary school.

This claim has to a greater or less extent been ignored; but with the growing appreciation of the value of health, with the increasing demands of modern life upon it, with greater insight into the relation between health and physical development, and between these and intellectual work and psychical development, more and more pressing has grown the demand that health receive consideration.

In view of this claim and in view of what is implied in satisfying it, there have arisen three distinct problems: the hygiene of the school plant, of instruction, and of the child.

Under the problem of the hygiene of the school plant are to be included questions of temperature, heating, lighting, ventilation, construction, and care of school buildings, also the hygiene of school furniture, apparatus, and fixtures — in short, all that has to do with the material make-up and environment of the school in so far as this affects the physical well-being of children.

With the problem of the hygiene of instruction are to

be associated questions such as the length of the school year, of the school day, of the recitation period, the arrangement of the daily program, home study, the hygiene of the different school subjects, the length and distribution of recesses, — in a word, questions arising in connection with instruction having to do with health and physical welfare.

To the problem of the hygiene of the pupil there belong questions with reference to the defects and care of the teeth and of the sense organs, problems of normal and arrested development, of habits of posture and of movement, of personal habits, exercise, food, clothing, and of the diseases of children. Of the questions injected of late into school organization, none have been studied more carefully and with better results than these. Such questions have not been taken up, however, merely because of scientific interest or with the intent of making a hospital of the school, but that certain of the diseases and defects of children may be prevented and corrected.

2. *Claim Imposed by Psychical Nature and Implications.* — The claim registered by the psychical nature of the child, in view more especially of the last three of the above principles, is that the school be so organized as to foster at each period of life his will and intellectual development.

The imposition of this claim has given rise, on the one hand, to the question of the character of school life and conduct, which we will discuss later, and it has given rise, on the other, to the problem which, for the want of a better term, may be designated the statics of instruction. Belonging to the statics of instruction may be grouped questions with reference to the length of the course of

study, standards of efficiency, school losses, withdrawals, and "repeaters," questions of gradation and classification, methods of promotion, size of classes, individual or class teaching, slow and fast grades, instruction by grades or departments.

It is not our purpose to enter into a detailed study of the questions arising from the claim imposed upon the organization of the school by either the physical or psychical nature of the child. It suffices in this connection if the teacher appreciates the source of these problems and recognizes that the basis and test of their solution and consequently of the final organization of the school in these respects is the physical and pyschical development of the child as conditioned by the purposes of elementary education.

§ 4. Instruction as a Factor

Instruction, though itself a means, requires, nevertheless, on its part, that the school be so organized as to make possible the teaching, both on the side of subject matter and of method, implied in carrying on the work of the elementary school. In view of this claim, instruction enters in as a factor in conditioning the size and organization of classes, standards of class order, distribution of time, equipment to be supplied, and even into conditioning the construction of the plant itself. By reason thereof, the organization of a reading or of an arithmetic class, and a class in drawing, experimental science, or hand-work will differ, as will also the size of such classes, standards of class order, and equipment. It is in recognition of this claim that one room of a modern school building is a recitation room, another a laboratory or a

workshop, and still another, a drawing room. A school may therefore be said, from this point of view, to be appropriately organized when that diversity of classes is rendered possible, that diversity of materials supplied, and the school plant so constructed as to render possible the giving, under the most favorable conditions, of that instruction requisite to the accomplishment of the aim of the given school.

§ 5. Society as a Factor

1. *The Claim Imposed.* — Society as the final conditioning factor requires, in view more especially of the first of the above principles, that the school be so organized that both the spirit dominating it and the principles controlling behavior within it are typical of the life of the larger social whole, the interests of which are to be conserved by the given school.

This claim, like the one registered by the physical nature of the child, has to a greater or less extent been ignored. But with increasing insight into the significance of learning through living, it is becoming more and more apparent that the school in which the social spirit is disregarded, in which no provision for genuine social activity is made, in which no opportunity for practicing the social virtues or of living socially is offered, is in nowise adapted to prepare the child, upon leaving it, to enter into the larger social life of his people as an appreciative and active member.

2. *Implications.* — To bring into the elementary school the spirit and principles of social life implies making it a typical social institution, creating in it typical social situations. For it is only as the school is made a typical

social institution that the child catches the social spirit and makes this, of his own will, the dominant temper of his life; and it is only as the child is brought to meet typical social situations that he is able to understand the origin and necessity of the principles of the larger social order, and of his own accord to adopt these as the guiding principles of his conduct.

The making of life within the elementary school typical of the highest and best in the larger life outside of the school implies the socialization of methods of instruction, the socialization of the recitation, and the socialization of school conduct.

The socialization of methods of instruction involves, on the one hand, the development of a social motive on the part of the child for the acquisition of knowledge and, on the other, the giving of free opportunity to him to use this knowledge in coöperative activity.

The motives for gaining knowledge under present methods are exceedingly individualistic. Appeal is made to personal profit and advantage, to affection for the teacher, to fear, pride, emulation, and rivalry. The resulting motives are not wholly bad, but, taken as a whole, they are inadequate for the purposes of genuine education. They are external and too often break down with a change of external conditions. Over against this appeal to the individualistic instincts and to the selfish aspects of human nature, methods which are social in their import seek to develop in the child a desire to acquire knowledge because of its relation to the work of his class or to the life of the community of which he is a member; they seek to render motives that are self-centered subordinate to those centered in others, to render motives arising from a desire for per-

sonal advancement subordinate to those springing from a desire for the betterment of the social whole.

Present methods likewise place the emphasis upon the use of knowledge for personal ends rather than upon its use in mutual aid. The fault here is not that its employment to individual profit is emphasized, but that its use in social service is not deemed of as great importance. Under present methods, in so far as opportunity is given, the child employs his knowledge to make a bow and arrow for himself, to gain personal insight into a phenomenon of nature, a piece of literature, or into the solution of a class of problems, but little or no place is made for the social application of the same. Indeed, so thoroughly indoctrinated is the school in the thought that the child should keep what he knows to himself and use it only for his own advancement, "that for one child to help another in his task has become a school crime, . . . mutual assistance, instead of being the most natural form of coöperation and association, becomes a clandestine effort to relieve one's neighbor of his proper duties." The normal outcome of this is a spirit of selfishness. In contrast, methods that are socialized make large place in the school for the employment of knowledge in mutual aid, in coöperative constructions, creations, or productions, in the accomplishment of which each is encouraged to perform his part, to make his contribution. To aid others, to join in social enterprise is thus made a personal privilege as well as a school duty, and the use of knowledge in service to others, in the advancement of school ends, is thereby fostered.

Giving methods social import has its influence upon the recitation, but the socialization of the recitation involves, in addition, the making of it primarily a period of coöper-

ative activity in the attainment of definite results, in the achievement of which each pupil shares in the contribution of every other, adds his own, and is judged in the light thereof.

We fail to recognize, writes Dewey, how individualistic in spirit the present recitation is. "Imagine forty children all engaged in reading the same books, and in preparing and reciting the same lessons day after day. Suppose that this constitutes by far the larger part of their work, and that they are continually judged from the standpoint of what they are able to take in in a study hour, and to reproduce in a recitation hour. There is next to no opportunity here for any social or moral division of labor. There is no opportunity for each child to work out something specifically his own, which he may contribute to the common stock, while he, in turn, participates in the productions of others. All are set to do exactly the same work and turn out the same results. The social spirit is not cultivated — in fact, in so far as this method gets in its work, it gradually atrophies for lack of use. . . . The child is born with a natural desire to give out, to do, and that means to serve. When this tendency is not made use of, when conditions are such that other motives are substituted, the reaction against the social spirit is much larger than we have any idea of — especially when the burden of the work, week after week, and year after year, falls upon this side. But lack of cultivation of the social spirit is not all. Positively individualistic motives and standards are cultivated. . . . Just because all are doing the same work, and are judged (both in recitation and in examination) with reference to grading and to promotion, not from the standpoint of their motives or the ends which they are

trying to reach, the feeling of superiority is unduly appealed to. The children are judged with reference to their capacity to present the same external set of facts and ideas. As a consequence, they must be placed in the hierarchy on the basis of this purely objective standard. . . . The child is (thereby) prematurely launched into the region of individualistic competition, and this in a direction where competition is least applicable, viz., in intellectual and spiritual matters, whose law is coöperation and participation."

Over against this is the recitation which is social in its influence, where each pupil within limits has his particular contribution to make. One provides, for example, certain illustrative materials, arranges for certain experiments, another brings to the class this or that portion of the review, another makes special preparation upon this or that point in the subject under consideration and presents the same. Or, this group solves and explains for the remainder of the class these problems, that group, still others. Or, this pupil makes this part of a given whole, that one, another, and still another, a third part, and a dam, forest, or wigwam is constructed. Or, this child is the big bear, that one, the mother bear, this one, the little bear, a final one, little Silver Locks, and the story of Silver Locks and the Three Bears is dramatized. Thus, in a hundred ways the recitation may be made into a period of coöperative and social creation, production, or construction. Individualistic motives are thereby overshadowed, effort becomes characteristically social, the child is no longer judged by his fellows and his teacher by what he has personally absorbed and achieved, — an individualistic standard, — but by his motives, by the quality of the work done, and by what he has contributed to the common purpose, — a social stand-

ard, — and he is not only thus habituated to social coöperation, but there is developed in him a genuine social spirit, that spirit which makes one alive to his duties to his fellows and readily disposed to join with others in the attainment of social advantages.

Though the socialization of methods of instruction and of the recitation has its effect upon school behavior, the complete socialization of school conduct implies making the same principles basic in the life of the school as are basic in that outside of it.

Of the principles fundamental in social life and applicable to the life of the school, the first to be cited is coöperation, the essence of which is mutual helpfulness. Akin to coöperation are regularity, punctuality, and industry.[1] That these are minor principles of social action is apparent. Note the regularity in all modes of individual and public activity, witness the punctuality required of all in whatever field they may labor, consider the industry imposed upon one by modern conditions.

Social life of any but the lowest order implies a second principle, — that of the equality of persons. This principle is especially applicable to the school, as it manifests itself in uniform and general modes of regarding the individual and more particularly in the corollary, — politeness, — that is, the treatment of each individual with courtesy without regard to present station, condition, or circumstances.

Social life of a still higher order implies also the equality

[1] It is important at this point to keep in mind the distinction between a principle of action and the virtue resulting from conforming life thereto. This is at times difficult to do, as often the same term is used to designate both the principle and the derived virtue.

of rights and of opportunities. This principle finds expression in the subordinate ideas of the right to property and its consequent sacredness, the right to happiness, and in the duty of honesty and of truthfulness.

In social life of the highest type, there is implied, in addition, the supremacy of the law. Without this principle, there can be no equality of persons or of opportunities, no genuine coöperation. Companion to law is justice, the rendering to each according to his rights and deeds, and not according to his possibilities, wishes, or unrealized aspirations.

But social life that rests upon the supremacy of the law and upon absolute justice is cold and heartless. Consequently, above and beyond the supremacy of the law and of absolute justice, there is essential to the very highest type of social coöperation the principle of charity, — charity that giveth and demandeth not in return. This principle underlies and gives color to our whole social fabric and finds expression in personal helpfulness and in public institutions of philanthropy. Related thereto are sympathy, helpfulness, liberality, and toleration.

The above are, in the main, the larger principles of social life, which are applicable, and which in their particular national expression must be made cardinal in the life of the elementary school, if school conduct is to be socialized.

In doing this, they cannot be imposed upon the school from without, nor should they be presented as coming from the teacher, or as depending upon or vanishing with him, and, above all, they should not be presented as belonging only to the school. For in making them basic in school life, the child must be brought to see that these principles arise out of the nature of that life and are necessary to it;

he must be brought to see that they abide though the teacher changes, that they are not only principles of school conduct but also of conduct in business, the home, the "social circle," the community, the state, and the church; he must be brought to understand that obedience thereto is the condition of attaining the fullest and richest individual experiences. In this way only is life in the school to be made real and to be brought into relation with that of the social whole; in this way only will the child come, through the school, to an appreciation of the fundamental principles of life, and to an appreciation of their binding force upon his conduct; and, finally, in this way only will the habits acquired in the school be habits which contribute to personal and social efficiency, — the final test of education.

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